

Commentary on Studies Citing This Author Concerning Doodling as a Measure of Burnout

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Received date: February 29, 2024, **Accepted date:** April 15, 2024

Citation: Nash C. Commentary on Studies Citing This Author Concerning Doodling as a Measure of Burnout. J Ment Health Disord. 2024;4(1):8-12.

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Abstract

The ability of doodling to act as an indicator of depression and anxiety regarding research burnout is a topic that has seen the publication of six articles by this author since 2021. This commentary aims to determine the extent to which any of these articles have been cited by subsequent researchers in furthering the literature on doodling. The keywords “C Nash Doodling Burnout” were searched through Google Scholar in February 2024 with 142 returns. Only four of these reports included all keywords. Of these returned studies, two were found to add to the literature on doodling substantially, in part as a result of the citations to the work of this author. However, one of these two publications did so while also including a misrepresentation of this author’s work. With few studies on doodling behavior, noting these publications and their limitations represents an important contribution. This work also adds to the paucity of publications by authors examining citations to their work.

Keywords: C Nash, Doodling, Burnout, Google Scholar, Citations

Introduction

Since 2021, this author has published six articles concerning doodling as a possible indicator of burnout in healthcare researchers—four published in 2021 [1-4], one in 2022 [5], and one in 2023 [6]. These publications were based on unexpected outcomes associated with one diverse and voluntary health narrative research group, where doodling was introduced and appeared to be a possible measure of depression and anxiety. Burnout has been identified to adversely affect healthcare researchers, their place of employment, and the production of valuable research in being directly associated with symptoms of depression and anxiety [2,7,8]. Consequently, having an easily employed and reliable measure of depression and anxiety in healthcare researchers is important if burnout is to be diminished [2,9]. Changes to doodling execution and content, and their effect on the doodler—metrics previously that were unmentioned in the literature—were seen to hold promise for evaluating depression and anxiety levels of researchers when the group met in person [2]. Under such well-defined

conditions, variations in doodling may serve as an indicator of change in the internal states of depression and anxiety [2,10]. Thus, noting changes in these circumstances may act as an aid in reducing burnout. This study aims to identify the extent to which subsequent researchers have furthered the literature on doodling based on the results of any of these six previous publications by this author.

Materials and Method

To gather the materials that have cited at least one of the six articles published by the author on doodling regarding burnout, a Google Scholar search was conducted on 23 February 2024 of the following keywords, “C Nash Doodling Burnout”.

Results

There were 142 returns. Of these, four publications included all the keywords—three articles in peer-reviewed journals,

and one a doctoral thesis. The articles returned were: Development of Literature Academic Anxiety From 2002-2021: A Bibliometric Analysis Approach [11]; Health Sciences before, during and after the COVID-19 Pandemic [12]; "I CAN'T SAY IT"! Doodling to emancipate adolescents' voices in a transformative mixed methods study of covert bullying in Jamaican high schools [13]. The thesis is Doodling as a Predictor of Executive Functioning [14]. Of these, two were published in 2022 [11,14], and the other two in 2023 [12,13].

Discussion

This discussion to follow will expand upon the information provided in **Table 1** concerning the articles that were returned in the search that cite the author regarding at least one of the six works that have been published by the author on doodling behavior in healthcare researchers.

Development of Literature Academic Anxiety From 2002-2021: A Bibliometric Analysis Approach [11] concerns utilizing a statistical tool found useful for visualizing developments in science to determine research gaps in academic anxiety research. It is not an article regarding doodling behavior; the use made of this author's work is only concerning the effect of COVID-19 on face to face meetings. The reference cited in [11] of this author is [1]. The mention made is as follows, "a study conducted by Nash, (2021) explained that the COVID-19 condition made restrictions on activities carried out face to face with other people" [11] (p. 8). The authors continue by stating that because of these restrictions "evaluations of students regarding learning experiences during the COVID-19 pandemic began to be carried out in several countries" [15-17], implying that there was a causal relationship between the publication of [1] and further research carried out internationally to test the effect of COVID-19 restrictions on

Table 1. Comparison of the points attributed to the author in publications citing the author and an assessment of the interpretation.

Publication citing author	Point attributed to author	Interpretation
Development of Literature Academic Anxiety From 2002-2021: A Bibliometric Analysis Approach	COVID-19 restricted activities carried out face to face with other people	Correctly interpreted, but the point is irrelevant to doodling behavior.
Health Sciences before, during and after the COVID-19 Pandemic	Doodling: -has a potential role in the evaluation of burnout in healthcare researchers who experienced anxiety and/or depression related to their workplace activities. -makes Individuals who partook in mindfulness activities more likely to feel relaxed during in-person meetings, possibly because there was more interaction between participants during physical meetings	Finding a potential role for doodling in the evaluation of burnout in these health researchers is correct. In-person meetings did make participants feel more relaxed to doodle than online meetings and this was considered to be possibly because there was more interaction at physical meetings, but this second publication citing the author did not advance research on doodling behavior
"I CAN'T SAY IT"! Doodling to emancipate adolescents' voices in a transformative mixed methods study of covert bullying in Jamaican high schools	Doodling: -encourages self-reported relaxation -helps maintain meeting engagement -has a decades-long history - may measure participants' internal psychological state when actively encouraged during in-person meetings -may cause participants with a negative perception of doodling to leave the meeting	All points made were a correct interpretation regarding the work of the author except it is incorrectly reported that the author had studied doodling behavior when the result regarding doodling was noted unexpectedly not as part of a predesigned study. The research conducted referencing the author results in a significant contribution to research on doodling behavior
Doodling as a Predictor of Executive Functioning	Doodling: - behavior is something children are taught to stop early in their education. -behavior research was first noted by this author to have begun with the 1938 work of Maclay <i>et al.</i> - is a possible indicator of internal states of distress, dysphoria, depression, and anxiety. -can be used for a variety of purposes	After making these correct observations, the thesis author then mistakenly attributes to this author the idea that doodling can serve as a means of emotional regulation when the author only speculated that doodling behavior might be an indicator of negative emotions. The thesis expands the research on doodling behavior but is based on an incorrect interpretation of this author's publications

face to face activities to reduce burnout in students. As such, this article did not add to the literature on doodling.

The second publication citing a work of this author [1] is [12]. The quotation from the article that provides the citation appears on its first page: "Nash evaluated the potential role of doodling in the evaluation of burnout in healthcare researchers who experienced anxiety and/or depression related to their workplace activities. The investigator compared in-person pre-pandemic versus online meetings during the COVID-19 pandemic and pointed out that individuals who partook in these mindfulness activities were more likely to feel relaxed when doodling during in-person meetings, possibly because there was more interaction between participants during physical meetings". This quotation is intended as an abstract of [1] in that the purpose of the second publication is to act as an introduction to the special issue in which [1] is published. As merely an introduction to the special issue, it does not intend to further the research on doodling. Instead, the explanation is given that the special issue was created to provide high-quality papers on several aspects of the effects of the COVID-19 pandemic on health sciences [1,18-21]. Other than that of [1], none of the papers published in this special issue relates to doodling behavior.

The third publication that references work by this author is [13]. Unlike the first two publications that cite this author, this third references two articles by this author [1,2] and does so by demonstrating a precise understanding of the results of these studies. In an 11-page paper, this author is cited 26 times, noting doodling: (1) to be spontaneous drawing beginning with no specific design in mind that encourages relaxation in self-reported data studied in relation to mental health; (2) helps participants to stay engaged during a meeting; (3) has a decades-long history of which this author (among others [22,23]), has contributed in data collection of longitudinal qualitative research of psychological phenomena within an academic setting; (4) may be a measure concerning participants' internal psychological state when actively encouraged during in-person meetings; (5) and may cause group participants to leave the group if they have negative perceptions of doodling. A small error made in reporting the work of this author in the article is that it is referred to as a study of doodling behavior when, in fact, the results were noted unexpectedly and were not the outcome of a predesigned study. The research undertaken by this author reported by [13] was regarding the responses to writing prompts, not to doodling undertaken. That doodling might serve as a possible measure of depression and anxiety of participants was noted circumstantially. Nevertheless, as correctly reported in [13], the aim of this author in then investigating doodling as a measure of the internal psychological states of participants was to determine the reliability of doodling as a measure, as doodling behavior was dependent on contextual factors. Concerning these factors, [13] notes this author's finding that

using the entire sheet of paper while doodling is more likely to be a good indicator of psychological states than small doodles. However, as related in [13], this author found that this ability to act as a measure was negatively affected if the doodling was done online. Mentioning the small sample size of this author's work, the author of [13] assessed the value of doodling as a transformative-emancipatory experience while confirming the discovery of this author that doodles covering the entire page were more likely to demonstrate internal intent. [13] also found—in agreement with this author—that the doodles provided a space to document internal processing of experience, confirming that doodling is best described as a spontaneous method. In conclusion, [13] affirmed with this author that doodling can support relaxation in being an emancipatory tool for confronting internal struggles. As noted in [13], this also corresponds with earlier findings by Andrade [24], Belkofer *et al.* [25], Bolwek *et al.* [26], Kimal *et al.* [27], and Siagto-Wakat [28]. A detailed and extensive study, [13] represents a significant contribution to the literature on doodling and does so in part based on the evaluation of the two articles by this author that are cited [1,2].

The fourth publication citing the work of this author is [14], a 2022 doctoral thesis. [2] is cited six times throughout the thesis. The introductory paragraph offers the first citation regarding people's perceived need to stop doodling as something to master early in their educational careers (note: the thesis author sometimes references [2] as published in 2020, rather than 2021). The next citation to this author is in the paragraph immediately following, referring to this author's identification of the seminal research on doodling—the 1938 work of Maclay *et al.* [29]—which had been overlooked in the literature on doodling before this author had located the work and quoted it in [2]. For example, Andrade's influential research [24] does not mention Maclay *et al.*, nor does Siagto-Wakat [28]. The next citation of this author appears on page 27 of the thesis. It concerns this author's speculation that there is a link between doodling and emotional regulation such that doodling might be a "possible indicator of internal states of distress, dysphoria, depression and anxiety" [2] (an incorrect page number is cited in the thesis for this quotation). Following, on page 28, the next citation notes this author's summary regarding the uses of doodling for a variety of purposes, including entertainment, relaxation, and creativity. The connection this author of [2] made to doodling and emotion resurfaces in the thesis on page 41, representing the fifth citation. Based on these citations, the thesis author then mistakenly attributes to this author the idea that doodling can serve as a means of emotional regulation [14] (p. 85). Having the possibility of being an indicator of negative emotions, or a tool in confronting these negative emotions, is not equivalent to acting as a means of emotional regulation. Mistakenly, this thesis author purports that they are considered equivalent by this author. Additionally problematic is that this inaccurate assertion is used by the thesis author in contrast to the

research results of the thesis, insinuating that these results demonstrate the findings of this author do not hold. To serve as a contrast for the thesis author's argument may be the reason for the misinterpretation of this author's work. Although the study for this thesis expands the research on doodling, as a result of this imprecise assertion by its author, how it does so regarding a final assessment of this author's work on doodling is misleading.

Conclusion

The purpose of this investigation into publications citing the doodling research of this author has been to determine whether this additional research advances the literature on doodling as a result of such citation and, if so, in what way. It has been noted that only four publications cite the work of this author and, of the six articles of this author that might have been cited, only two at the most were referenced [1,2]. Of these four articles returned in the search, two [11,12] do not move the literature on doodling forward, as the reason for quoting this author was other than to improve research on doodling. In one of these cases [11] the author cites this author related to evident changes from in-person to online meetings. In the other [12], as the editor of a special issue, the researcher cited this author as being a contributor. The other two articles citing this author [13,14] do advance the literature on doodling—the third does so significantly, in part based on the previous work of this author. However, the fourth—a doctoral thesis—mistakenly attributes the view to this author that doodling can affect emotional regulation when what this author claimed was that it might be a measure of depression and anxiety and that it might provide the opportunity to confront internal states in context-dependent meetings. What this means is that although the research on doodling has moved ahead with both publications, future researchers in this area are advised to use caution in understanding and citing the actual results if this author's publications are to continue to be useful in this regard.

The strengths of this examination are that it has determined the extent to which the six publications of this author on doodling behavior in health researchers have influenced other researchers in their investigations of doodling. As authors rarely report on the influence of their work concerning citations by other researchers [30,31], this is a useful endeavor. Furthermore, in reporting in this manner, both the accurate and inaccurate ways in which this author's work has been cited have been identified.

The weaknesses are that although this author has published six articles on the topic of doodling behavior in health researchers, only two have been referenced. Nevertheless, regarding the paucity of research on doodling, these few are a significant increase. In comparison, although the work of Maclay *et al.* [29] was published in 1938, it wasn't until the

1980s that any additional work of significance was published on doodling [22,23]; furthermore, what was published did not reference Maclay *et al.* Therefore, the fact that two works have been published in the last three years citing this author's work on doodling represents significant progress in advancing the literature on doodling, encouraging an increasing amount of future research in the area.

Author Contribution Statement

Carol Nash is the sole author of this article.

Conflicts of Interest

The author declares there are no conflicts of interest.

Funding Statement

This research received no funding.

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