

Article

Increasing Evidence of Impaired Team Mindfulness in Online Academic Meetings Intended to Reduce Burnout

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Abstract: Burnout, a negative job-related psychological state particularly associated with the health professions, equates to a loss of valuable research in healthcare researchers. Team mindfulness, recognized to enhance personal fulfilment through work engagement, represents one important aspect found effective in reducing burnout. In a specific series of diverse membership academic meetings intended to reduce research burnout—employing writing prompts, doodling and continuous developmental feedback to do so—team mindfulness was demonstrated when conducted in person. Therefore, determining if team mindfulness is evident when holding such academic meetings online is relevant. When COVID-19 limitations required moving these academic meetings online, it was previously noted and reported that team mindfulness was affected in no longer being present during the first eighteen months of restrictions. To discover if this result persisted, question asking, doodles submitted and feedback responses were analyzed of the following year's academic meetings for the same group, both quantitatively and qualitatively. In finding the team mindfulness of these meetings additionally compromised the second full year, online practices actually found successful at creating and supporting team mindfulness—online games—are identified and considered. Concluding implications are noted and recommendations made regarding team mindfulness in reducing burnout for future online academic meetings.

Keywords: burnout; team mindfulness; work engagement; online meetings; academic meetings; writing prompts; doodling; COVID-19; online games

1. Introduction

Burnout is a negative, job-related psychological state exhibited through physical fatigue, emotional exhaustion, and loss of motivation first identified in the 1970s [1]. It arises from prolonged chronic interpersonal stressors associated with work and is represented by three key dimensions: overwhelming exhaustion, negative work-related feelings of cynicism and disassociation, and a sense of futility from perceived job-affiliated failure [2]. It has been particularly associated with the health professions [3]. For healthcare researchers and their employers, the discontinuation of work undertaken equates to a loss of the production of valuable research [4]. Burnout is directly associated with depression and anxiety [5,6]. Therefore, it is important to develop practices with healthcare researchers to diminish their depression and anxiety by reducing burnout. One component in doing so is to encourage team mindfulness in researchers.

Team mindfulness, a construct first developed in 2017, is defined as “a shared belief among team members that their interactions are defined by a non-judgmental awareness and an attention in processing within-team experiences” [7] (p. 326). With respect to how a meeting environment is created and maintained, team mindfulness has evolved to become an important consideration in enhancing work-related personal fulfilment [8]. It is evident when the experiences of team members as well as their objectives, tasks, roles and structures are collectively and regularly acknowledged non-judgmentally by team members [9]. Furthermore, it is an important ingredient in reducing burnout with groups [10].

In contrast to burnout, work engagement is a positive and fulfilling state of mind related to work characterized by behaviors that are vigorous, dedicated, and absorbed in the task at hand [11]. Work engagement has been identified as an essential psychological experience of individuals that connects environmental and personal resources and performance [12]. Embedded in their work environment, positive individual attitudes and behavioral expressions of researchers in a work organization that demonstrates work engagement are interacting results of these individuals' own attributes and work-defined factors, including the interpersonal trust among team members [13]. Aspects necessary for reengagement by researchers who sustain burnout to experience work engagement include the need for professional autonomy and a feeling of community based on trust with fair and equitable treatment among members [2].

One specific series of in-person academic meetings was able to develop team mindfulness, evident in the questions group members asked of each other in responding to writing prompts, the manner in which they asked questions in relation to their doodles (both encouraged and shared at the end of each session), and the feedback provided at the end of each term, demonstrating work engagement [14]. This series of academic meetings is the University of Toronto Health Narratives Research Group (HeNReG) facilitated by this author [15]. Two of its important features intended to promote team mindfulness are its diverse membership and the continuous developmental feedback method employed. The purpose of these academic meetings is to reenergize and sustain career-long research and decrease burnout from research-related anxiety and depression.

The years when the HeNReG was able to meet in person, two dimensions of team mindfulness were evident: receptive, open, and non-judgmental experiential processing; and aware attention to present perceptions in relation to the function of the group [7]. However, during the first year and a half of lockdown as a result of COVID-19—when meetings were no longer conducted in person—the aware attention to present perceptions was lost to the group; although the receptive, open, and nonjudgmental experiential processing of the group's interactions remained within the online meetings through the private Facebook group. The key component of aware attention to present perceptions that was lost in online meetings in response to the limitations of COVID-19 was the active listening [16] by the participants to other group members regarding their responses to the writing prompts and to each other's in-person descriptions of their doodles.

COVID-19 is a novel bat-originating coronavirus, SARS CoV-2 [17], first identified as infecting humans 25 November 2019 in Wuhan, China [18]. On 30 January 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a public health emergency of international concern (PHEIC), the WHO's highest level of alarm. After 41 days, on 11 March 2020, the WHO reclassified COVID-19 outbreak as a pandemic [19]. In response to the WHO's declaration of pandemic, as of 12 March 2020, all academic meetings at the University of Toronto were required to move online to continue [20]. The HeNReG was among the academic meetings throughout the world that made this required transition [21].

During the first full year of COVID-19 restrictions, the 2020/21 academic year, the private Facebook group aspect of the HeNReG—set up yearly for the group—was able to continue most of the pre-COVID-19 interactions of the HeNReG compared with when the group meetings were in-person [22]. Yet, by being unable to replicate the aware attention to present perceptions—one of the two dimensions of team mindfulness—question posing of other members (regarding their responses to the prompts and their doodling behavior) was unable to support team mindfulness [7]. The research question of this study then is as follows: Did a lack of team mindfulness in the online meetings of the HeNReG persist the second full year of COVID-19 restrictions during the 2021/22 academic year?

2. Materials and Methods

The Health Narratives Research Group (HeNReG) is associated with the Health, Arts Humanities Program of the Department of Psychiatry at the University of Toronto and

has been offered since 2015. Between the beginning of October to the end of April each year, the HeNReG provides academic group meetings for researchers who self-identify as experiencing research burnout. It is designed to take each participant's story that initiated their healthcare interest and evolve it into a narrative with a particular point of view with the help of weekly writing prompts and the questions posed by participants regarding responses to the writing prompts. The features of the group have been reported elsewhere [22].

Once the group was required to meet online as a result of COVID-19 limitations the meetings were conducted in a yearly-created private Facebook group. While waiting for members to respond to their questions asked online over the two-hour meeting period, the participants were encouraged to doodle on their own, as they would have done in person as part of a group in the years before COVID-19—although there was no requirement to do so. Those doodles produced were sent to the facilitator at the end of the online meeting for interest, not evaluation, who then posted them to the same private Facebook group where the online meeting took place. Participants were encouraged to see doodling as a way to pass the time while waiting to pose questions online to others and respond to questions provided to them, as doodling has been noted to be helpful in decreasing depression and anxiety [22]. At the end of each term, twice a year, participants were asked to formally provide their feedback on the group based on a feedback form common to the Health, Arts and Humanities Program.

Pre-COVID-19 restrictions to academic meetings, when the HeNReG met in person, it had been recognized that the group was able to display team mindfulness [14] found effective in helping the participating researchers decrease their self-identified burnout. Yet, when the in-person aspect of group was eliminated, and moving online was the only change to the group's operation during the first year and a half of the COVID-19 pandemic, one aspect of team mindfulness—active listening—was lost. Participants generally did not choose to meet synchronously, preferring to either participate asynchronously or to merely observe the participation that had taken place [14]. Some those who did meet synchronously still chose to only answer questions put to them rather than ask others questions as was expected in their joining the group.

To discover if this effect persisted during the second full year of restrictions, the number of times that participants asked each other questions during each of the 28-meeting sessions of the HeNReG has been compiled and is compared, both with the three years when the group met only online for at least part of the year and with the year before COVID-19 limitations were imposed, when the group met in person. Regarding the doodling aspect of the group meetings, after the group met solely online, there were no longer questions posed to group members about their doodles as there had been when the group met in person. As a result, the doodling aspect of the group's meetings cannot be considered in relation to questions asked and instead is investigated by comparing the number of doodles produced online in each of the three years when the group met online only for at least part of the year with the number created the year before the COVID-19 restrictions came into effect, when the group still met in person. Whether or not team mindfulness was preserved the second full year of online meetings for the HeNReG, it is important to note if the participants identified something lacking in meetings that might have been helpful to them in reducing their burnout. This will be determined by comparing the three narrative answers of the April feedback form responses completed by participants during the 2021/2022 academic year with the three previous years—two of which the group met for at least part of the year online, and the first, when the group still met in person. As well the responses to a final fourth narrative question, asked exclusively during the last two years specific to the doodling aspect of the group's activities, will be summarized.

As a result of COVID-19 restrictions demanding online meeting only of the HeNReG, the question asking aspect of the HeNReG with respect to participants then takes place once a participant has responded to the writing prompt of the week during the two-hour synchronous meeting in the private Facebook group. Other participants at that point ask further clarifying questions of the respondent to help that participant gain deeper insight

into their response. The questions permitted are those maintaining the question asking structure organized for the group. As such, questions asked throughout the academic year begin with the most objective questions and grow increasingly subjective each week. This is done by having participants ask questions beginning with a particular word in the following order: when, where, who, what, how and why. For the first four types of questions, four weeks each of question asking are devoted. "How" questions are asked for five weeks, and "why" questions for six weeks. It should be noted that, in comparing questions asked, almost all participants respond to the writing prompt provided by the facilitator each week. Therefore, what in particular is being examined here with the tables to follow is the question asking participants did of other members regarding the replies each made to the prompts.

3. Results

3.1. Question Asking by Participants

Beginning with the most recent academic year, 2021/22 (see Table 1), of the nineteen researchers who were part of the HeNReG, only ten asked questions of the other participants throughout the period. Furthermore of those ten, after the week 16, at the end of the more objective question asking, only two participants continued their question asking.

Table 1. Total Question Asking by the Nineteen HeNReG Participants During the Twenty Eight Sessions for 2021/22.

| # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | x | x | x | | | | x | x | X | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | x | x | x | | | x | x | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | x | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | x | | | | | | | | | x | | | | | | | | | | | |
| 14 | x | x | x | x | | | x | x | x | | x | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | x | | | | | | | | | | | |
| 16 | | | | | | | x | | | | | | | | | | x | | | | | | | | | | | |
| 17 | x | x | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | x | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tot | 5 | 5 | 4 | 2 | 3 | 4 | 3 | 5 | 2 | 3 | 2 | 2 | 4 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | |

This low rate of question asking for the 2021/22 academic year can be compared with the results from the 2020/21 academic year, the first full year of online meetings only of the HeNReG as a result of COVID-19 limitations (see Table 2). That year, with twenty

participants, sixteen participants asked questions of others at some point throughout the year. However, although this represents a much greater percentage of participants than the 2021/22 academic year, ten of those participants were engaged in question asking for ten weeks or less, with seven of those ten for fewer than five weeks.

Table 2. Total Question Asking by the Twenty HeNReG Participants During the Twenty Eight Sessions for 2020/21.

| # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | |
|-----|---|---|---|---|---|---|----|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| 1 | | x | | | x | | | x | x | | | x | | | | | | x | | | | | | | x | | | | |
| 2 | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | |
| 3 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 4 | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| 5 | | x | | | | | | x | | | x | | | | | | | | | | | | | | | | | | |
| 6 | | | | x | | | | | | | | | | | | | | | | | | | | | | x | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | x | x | x | | | | x | | x | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | x | | | | | | | x | | | | | | | | | | | | | | | | | | |
| 10 | x | x | x | | | | x | | | | x | | | | | x | | x | x | x | | | | | | | | | |
| 11 | | | | | | | | | x | x | x | x | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | x | | | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 14 | x | x | x | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 15 | x | | x | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 16 | x | x | x | x | | x | | x | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 19 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tot | 8 | 8 | 9 | 7 | 4 | 7 | 11 | 5 | 6 | 7 | 4 | 7 | 7 | 6 | 4 | 4 | 5 | 5 | 3 | 5 | 4 | 3 | 3 | 1 | 5 | 3 | 3 | 3 | |

If the 2019/20 academic results of question asking (see Table 3) are examined, it is evident that a change in participation occurred as a result of the COVID-19 lockdown that happened after week 21. That year, there were twenty-three participants. Of these, sixteen asked others questions. However, before week 22, the question asking that took place generally happened in-person with few participants ever asking questions only on the private Facebook group (although such online participation was always available as an option). With the group moving to online-only after March 12, 2020, seven of those who had been participating in question asking before this time stopped asking questions (for two of these participants, they had stopped asking questions before the lockdown).

Table 3. Total Question Asking by the Twenty Three HeNReG Participants During the Twenty Eight Sessions for 2019/20.

| # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | |
|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
| 1 | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | x | x | | x | | | | | | | | | | | | | | | | | | | | |
| 4 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| 9 | x | x | x | x | x | | x | x | x | x | | | | | x | | x | x | x | x | x | x | x | x | x | x | | | | |
| 10 | | | | x | x | | | | | x | | x | | | | x | | | | x | | | | | | | | | | |
| 11 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | x | x | | | x | x | | | | | | | | x | x | | | x | | | | | | | | | | |
| 14 | | x | x | | | | | | | x | | | x | | | x | x | x | x | x | x | x | x | x | x | x | x | | | |
| 15 | | | | | | x | | | x | | | | x | | | x | | | | x | x | | | | | | | | | |
| 16 | x | x | x | x | | x | x | | x | | x | | x | | | | | | | | | | | | | | | | | |
| 17 | x | | x | | x | | | x | | x | | | | | | | | | | x | x | x | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 20 | x | | x | x | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 21 | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | |
| 22 | x | | x | | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tot | 7 | 5 | 8 | 9 | 7 | 5 | 8 | 8 | 8 | 7 | 9 | 4 | 4 | 7 | 4 | 8 | 5 | 10 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 3 | 4 | 2 | | |

Finally, the last full year before the COVID-19 lockdown—the 2018/19 academic year (see Table 4)—will be compared with the previous years. That year, although there was an online platform for meeting in the private Facebook group, there were weekly in-person meetings to which most participants attended. There were seventeen participants. Of those, thirteen engaged in question asking with four stopping at some point in the year before the process was complete. Of the remainder, participation in question asking was fairly regular. To be noted is that this result is comparable to the participation in 2019/20 pre-lockdown. It was during this time when the group met in-person that team mindfulness was evident. Re-examining Table 1 comparatively—the second full year of restrictions brought on by COVID-19—question asking was so low that it was not possible for the group to demonstrate team mindfulness as the aware attention to participants was lacking in the group.

Table 4. Total Question Asking by the Seventeen HeNReG Participants During the Twenty Eight Sessions for 2018/19.

| # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | x | x | | x | | | x | x | | | | | | | | | | | | | | x | x | | |
| 3 | x | | x | x | x | | | x | | | x | x | x | x | | | | x | | | x | x | x | x | | x | | |
| 4 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 5 | | | x | x | | | | x | x | x | | | | | | | | | | | | | | | x | x | | |
| 6 | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | x | x | | | x | x | x | x | | x | | x | x | | | | | | | | | | | | | | | |
| 8 | x | | x | x | | | | x | | | x | | x | | x | | x | x | x | x | x | x | x | x | x | x | | |
| 9 | x | | | | | | | | x | | x | | x | | | | | | | | | | | | x | x | | |
| 10 | x | x | | x | | | x | | | | x | x | x | | | | x | | | x | | x | x | x | x | x | | |
| 11 | x | x | | x | | x | | | | | x | | | x | | | x | | | | | | | x | | | | |
| 12 | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | x | x | | | x | | x | x | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | |
| 15 | x | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tot | 7 | 7 | 6 | 6 | 6 | 3 | 5 | 4 | 3 | 5 | 5 | 4 | 6 | 4 | 7 | 3 | 3 | 4 | 4 | 3 | 5 | 4 | 4 | 5 | 3 | 7 | 6 | 6 |

3.2. Doodles Submitted

Although there was a marked reduction in the question asking of participants as a result of the COVID-19 restrictions causing the HeNReG to move to online meetings only, especially in the second full year of these meetings, the effect of the online meetings on doodles submitted was even more pronounced (see Table 5).

When the group met in person, during 2018/19 academic year, the average number of doodles produced per person over the 28 weeks was eleven. In 2019/20—until March 13, 2020, representing 21 weeks—the average number of doodles produced per person was eight. This was reduced to fewer than one doodle per person during the last seven weeks of 2020, just after the lockdown was introduced. The first full year of the COVID-19 restrictions, the number of doodles submitted was fewer than five per person—less than half the number submitted during a full year of in-person meetings. While for the 2021/22 year, the second full year of meeting only online, the number of doodles per person over the academic year was diminished to 2. More specifically, the facilitator, submitted doodles weekly and, for seventeen of the twenty-eight weeks, no other participant submitted doodles.

With respect to team mindfulness, once the doodles were no longer produced in-person, participants didn't receive questions about their doodles from the others. With no question asking taking place with respect to the doodles, doodling was no longer an activity that encouraged team mindfulness.

Table 5. Doodles provided over the last four years of twenty eight weeks of HeNReG meetings.

| Week of Meeting | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|-----------------|---------|---------|---------|---------|
| 1 | 13 | 12 | 2 | 2 |
| 2 | 4 | 6 | 4 | 2 |
| 3 | 8 | 11 | 4 | 3 |
| 4 | 12 | 11 | 6 | 1 |
| 5 | 4 | 10 | 7 | 2 |
| 6 | 5 | 5 | 5 | 3 |
| 7 | 6 | 11 | 2 | 1 |
| 8 | 8 | 13 | 6 | 2 |
| 9 | 2 | 9 | 2 | 2 |
| 10 | 9 | 5 | 2 | 2 |
| 11 | 7 | 12 | 1 | 1 |
| 12 | 7 | 4 | 5 | 1 |
| 13 | 9 | 6 | 5 | 1 |
| 14 | 6 | 17 | 4 | 2 |
| 15 | 5 | 8 | 5 | 1 |
| 16 | 5 | 18 | 2 | 1 |
| 17 | 7 | 7 | 5 | 1 |
| 18 | 5 | 13 | 2 | 1 |
| 19 | 10 | 5 | 1 | 1 |
| 20 | 4 | 0* | 2 | 1 |
| 21 | 8 | 8 | 2 | 1 |
| 22 | 6 | 2† | 2 | 1 |
| 23 | 10 | 3 | 4 | 1 |
| 24 | 10 | 4 | 1 | 1 |
| 25 | 4 | 2 | 5 | 1 |
| 26 | 4 | 2 | 2 | 2 |
| 27 | 9 | 3 | 2 | 2 |
| 28 | 8 | 4 | 4 | 1 |
| Total | 195 | 211 | 94 | 40 |

* No doodles produced as a result of a fire alarm ending the meeting early.

† Doodles produced from this session onwards created online as a result of COVID-19 limitations.

3.3. Feedback Provided

Feedback regarding the HeNReG is formally provided twice an academic year at the end of each term in response to feedback forms that are common to offerings in the Health, Arts and Humanities Program of the Department of Psychiatry at the University of Toronto. Until the 2020/21 academic year, there were seven different questions. That year, an eighth question, unique to the HeNReG, was added pertaining to the doodling aspect of the group. The purpose was to gather information on participants' insights related to doodling. Of the questions, four were multiple choice and four required short answers from participants (three, in the years prior to 2020/21). It is the short answer responses to those four questions that will be examined here.

Table 6 compares the last four years of themes in response to the question How was the group valuable to you as a researcher? Themes in 2018/19 were regarding the group when it met in person throughout the year. Those provided in 2019/20 were given after the HeNReG met in person most of the year, but online only after 12 March 2020 when the COVID-19 lockdown began. For both the 2020/21 and the 2021/22 academic year, the

themes provided in the April responses were with respect to online meetings, as the lockdown for COVID-19 persisted during these years.

What is interesting to note when comparing the four years is that, regardless of the limitations imposed by COVID-19, the value that was seen to be provided by the HeNReG was to a large extent similar in each of the four years. There were five themes that were common to all five years regarding the group: Encouraged self-reflection on research, Provided the perspectives of other researchers, Sharpened thinking about research, Gave a safe space to verbalize ideas about research, and Challenged my thinking about research. One addition theme was mentioned in three of the four years: Helped in greater understanding of one's research. Furthermore, of those themes that were unique, none of them were common between the two full years of COVID-19 restrictions. Consequently, it is reasonable to conclude that regarding in what way the group was valuable to the participants as researchers, the limitations brought on by COVID-19 had no obviously discernable effect. As the value of the group to participants did not change throughout the years it was independent from the lack of team mindfulness found when the group moved online only.

Table 6. Themes mentioned in responses provided on the April feedback forms to How was the group valuable to you as a researcher? for each of the four most recent academic years in order of receipt of feedback forms from group members.

| Themes mentioned in feedback forms | 2018 | 2019 | 2020 | 2021 |
|---|------|------|------|------|
| | 2019 | 2020 | 2021 | 2022 |
| Encouraged self-reflection on research | 4 | 4 | 5 | 2 |
| Provided the perspectives of other researchers | 4 | 3 | 4 | 4 |
| Helped in greater understanding of one's research | 2 | 1 | | 3 |
| Sharpened thinking about research | 2 | 2 | 1 | 1 |
| Invited a broader view of research | 3 | | | |
| Gave a safe space to verbalize ideas about research | 1 | 4 | 4 | 1 |
| Challenged my thinking about research | 1 | 1 | 2 | 2 |
| Restfully cleared my thoughts regarding my research | | 2 | | 1 |
| Determined the direction I should go in my research | | | 1 | |
| Presented a useful and easily employed structure for asking questions | 2 | 1 | | |
| Reoriented my priorities regarding my research | | 1 | | 1 |
| Engaged my curiosity and focus | | 2 | | |
| Offered a way to access my drives and motivations related to research | | | 1 | |
| Allowed for a comparison of ideas with previous years of this group | | | | 1 |
| Sorted out my problems with my research | | 1 | 1 | |
| Decreased barriers in research | | | 1 | |
| Tailored the understanding of research to the researcher | | | 2 | |
| Shared valuable resources | | | 1 | |
| Reminded me of what is important and valuable in my research | | | 1 | |
| Provided community and accountability in research | | | 1 | |
| Motivated and inspired me with respect to my research | | | 1 | |
| Learned more about self-expression | | | 1 | |
| Helped me work through my fears related to research | | | | 1 |

With the results of Table 7, concerned with how the HeNReG might be of help to the researchers in the future, there was less consistency regarding the themes mentioned. In fact, there was only one theme that was found common in each of the four years: Using the structure of weekly prompts to guide my self-reflection. What is useful with respect to the aims of the HeNReG is that this one theme common over all four years was the most important with respect to the theoretical intentions of the HeNReG. Two themes were

mentioned in only the first three years: Offering different points of view, and Decreasing my confusion as I decide what should be my focus of research. Given that few participants actually engaged in question asking of others during the 2021/22 academic year, it is reasonable that Offering different points of view was not a theme mentioned during this year. It remains unclear why participants didn't refer to Decreasing my confusion as I decide what should be my focus of research in 2021/22, as this could have been either because their confusion was not decreased or merely that other matters were considered more important to the participant to mention than this aspect.

Two responses—Sharing resources, and Permitting me to grow as a researcher—were provided in the first and last two years, indicating that this type of growth was perceived possible both when the HeNReG met in person and in meeting only online. One theme, Keeping me updated on interesting topics in various fields, was mentioned in the first three years alone. This is to be expected, as in the most recent year the participants did not communicate with each other, so they would not have been updated by others on interesting topics. Still, it is notable that the additional theme common to the most recent three years was Expanding my research to other fields, as this implies that participants were learning from each other—something that did not happen with respect to question asking in the final year. On the other hand, participants who mentioned this theme may have expanded their research to other fields in the years when the group met only online merely as a result of responding to the weekly prompts. As there was no clarification of the responses that produced this theme, the reason it was given is not known. What does seem clear is that, regarding the how the HeNReG might help researchers in the future, there was a change in the variety of themes noted away from meeting, listening to, and learning from others once the HeNReG met online-only.

Table 7. Themes mentioned in responses provided on the April feedback forms to How might the HeNReG be of help to you in the future? for each of the four most recent academic years in order of receipt of feedback forms from group.

| Themes mentioned in feedback forms | 2018 | 2019 | 2020 | 2021 |
|---|------|------|------|------|
| | 2019 | 2020 | 2021 | 2022 |
| Offering different points of view | 1 | 1 | 1 | |
| Opening up discussion | | 1 | | |
| Meeting additional interesting participants | 1 | | 2 | |
| Using the structure of weekly prompts to guide my self-reflection | 1 | 4 | 5 | 2 |
| Decreasing my confusion as I decide what should be my focus in my research | 1 | 2 | 1 | |
| Sharing resources | 1 | | 1 | 1 |
| Making me more open minded | 1 | 1 | | 1 |
| Permitting me to grow as a researcher | 1 | | 1 | 1 |
| Listening to others and giving feedback | 1 | | | |
| Keeping me updated on interesting topics in various fields | 1 | 1 | 1 | |
| Encouraging more collaborative artistic creation in my research | 1 | | 1 | |
| Understanding and respecting different points of view | 1 | | 1 | |
| Continuing with creative reflection | 1 | | | 1 |
| Helping me plan my research | 1 | | 1 | |
| Expanding my research to other fields | | 2 | 1 | 1 |
| Increasing my confidence as a researcher | | 1 | | |
| Learning more about various ways of expressing oneself creatively | | 1 | | |
| Practicing writing | | 1 | | 1 |
| Going on with my research | | 1 | 3 | |
| Continuing as part of the group in future years | | 1 | | |
| Coping with life challenges regarding my research | | 1 | | |
| Reminding me to construct a narrative that drives my work | | 1 | | |
| Acting as a sounding board | 1 | 1 | | |
| Supporting network connections | | 2 | | 1 |
| Clarifying what I value regarding my research | | 2 | | |
| Providing a comparison of results of the group over a number of years | | 1 | | |
| Including Zoom meetings | | | 1 | |
| Being a supportive community in a safe space | | 2 | | |
| These are questions I will return to in the future | | | 1 | |
| This will help me with my counselling business | | | 1 | |
| Increasing my sense of safety | | 1 | | |
| Continuing to challenge me as a researcher | | | 1 | |
| Having a community of researchers who think the person researching is important | | | 1 | |
| Clarifying my research interest confidently in knowing how to work with others | | | 1 | |
| Allow me to verbalize various ideas in laymen terms | | | 1 | |
| By being in person | | | 1 | |

The focus of Table 8 is the themes provided to Do you have other thoughts/comments on your experience as a participant in the HeNReG this term (especially as a result of COVID-19)? It was only after the COVID-19 lockdown was initiated that the bracketed phrase of this question was added to the feedback form question. Of the various themes mentioned, one alone was provided in each of the four years, I liked the option of participating remotely, I didn't have to travel. The importance of the HeNReG being available online even before the COVID-19 limitations left in-person meetings impossible seems to

indicate that regardless of the reason for participating online, this was a common additional thought about the experience of the HeNReG.

There were three themes that were common to each of the last three years of the HeNReG meetings: Thank you! Maybe we could include video chatting, and I miss the personal interaction now that everything is online. The first comment gives reason to suppose that HeNReG participants were especially appreciative of being able to participate in the HeNReG while COVID-19 limited so many other types of meetings, while the second and third agreed that additional personal interaction would have been welcomed.

Differentiating the final year, when there was little question asking of others, was that two group members were aware that they didn't participate fully and this was mentioned uniquely in the final year with the comment, I was disappointed in myself for not participating as much as I wanted. Yet, the theme that was most numerous during the 2021/22 academic year, was No other thoughts. This response was specific to the final year, as there wasn't another year that participants choose they had no other information to offer on their experience with the HeNReG. As such, additional reason was provided to suppose that, generally, the year's participants felt less engaged as group members than in years before.

Table 8. Themes mentioned in responses provided on the April feedback forms to Do you have other thoughts/comments on your experience as a participant in the HeNReG this term (especially as a result of COVID-19)? for each of the four most recent academic years in order of receipt of feedback forms from group members.

| Themes mentioned in feedback forms | 2018 2019 | 2019 2020 | 2020 2021 | 2021 2022 |
|--|--------------|--------------|--------------|--------------|
| This is a good program | 1 | | | |
| A wonderful experience | 1 | | | 1 |
| I love this group! | 1 | | 1 | |
| I liked the option of participating remotely, I didn't have to travel | 1 | 2 | 3 | 1 |
| I would like to try to not use prompts | 1 | | | |
| It would be good to have some exercises related to writing and art | 1 | | | |
| Drawing during the group is so helpful to get my mind thinking differently | 1 | | | |
| I wish I could come to the meetings more, but the group is in the workday | 1 | | 2 | |
| Moving online was a smooth transition | | 2 | | |
| I am thankful to be able to express myself in a non-judgemental environment | | 1 | | |
| The people brought together in this group are amazing | | 1 | | |
| I love learning about other fields of research | | 1 | | |
| The group is easily accessible for people with scheduling problems | | 1 | | |
| Thank you! | 3 | 1 | 1 | |
| I love the doodling aspect and seeing people's doodles | 2 | | | |
| Maybe we could include video chatting | 1 | 1 | 2 | |
| Having a designated meeting time makes me take time to self-reflect | 1 | | | |
| I miss the personal interaction now that everything is online | 1 | 2 | 2 | |
| I had expected the group to be more about creative writing, but I easily shifted focus | 1 | | | |
| I hope COVID-19 ends soon | | 2 | | |
| I was surprised that switching to online decreased the amount that people doodled | | 1 | | |
| Only a few people responded to questions asked when we were entirely online | | 1 | | |
| I like the flexibility and structure of the group | | 2 | | |
| The year has been very isolating, this group was a great way to network | | 2 | | |
| COVID-19 affected my ability to participate | | 1 | | |
| I'm glad we did not use the videoconferencing format as it is too exhausting | | 1 | | |
| It got me engaged with research during the lockdown | | 1 | | |
| It would be nice to get tips for navigating the online platform | | 1 | | |
| No other thoughts | | 4 | | |
| The pandemic hit me really hard, self-reflection helped me out | | 1 | | |
| Valuable and instrumental for my growth as a somatic grief practitioner and artist | | 1 | | |
| I was disappointed in myself for not participating as much as I wanted | | 2 | | |
| The online sessions were really well done—very organized and well constructed. | | 1 | | |
| I wish more people could have participated during the scheduled time | | 1 | | |

Table 9 represents the themes provided to the question posed during the last two years of the HeNReG meetings alone—What are your thoughts on doodling aspect of the HeNReG experience? The response most common to both years was, I do not doodle. Nevertheless, although it was most common and represented the reality of the number of doodles shared—particularly in the last year—in examining all the responses, a better understanding is provided as to why there were so few doodles provided. Participants noted that they either didn't have the time to doodle, found it a struggle, forgot to do so, or didn't know why they didn't doodle. Nevertheless, for those who didn't mention their lack of participation in doodling, the focus was on the helpful nature of doodling, most

particularly in providing relief. Doodling was variously found to be enjoyable, useful, fun, thought-provoking and helpful. What is interesting is that participants in the 2021/22 academic year had these positive opinions related to doodling during the HeNReG regardless of actually participating in doodling. This may mean that group members didn't believe they had to participate in doodling themselves to obtain a benefit from doodling—that merely seeing the doodles of others was helpful.

Table 9. Themes mentioned in responses provided on the April feedback forms to What are your thoughts on doodling aspect of the HeNReG experience? the two most recent academic years in order of receipt of feedback forms from group members.

| Themes mentioned in feedback forms | 2020 | 2021 | 2022 |
|--|------|------|------|
| | 2020 | 2021 | 2022 |
| Sometimes I went to doodle and I froze because I wasn't really sure what to draw | | 1 | |
| I think it helps, but it helps even more when we are doodling alongside others in the same | | 2 | |
| It is a great way to gage my mood and thoughts that I am bringing to the session | | 1 | |
| I love doodling, its one of the best parts of the HeNReG | | 1 | |
| It gave me something to do while waiting for people to participate online | | 1 | |
| Love it, doodling has always helped me feel calmer and more present in group discussions | | 2 | |
| Great aspect - I would like to take advantage of this more in the future | | 1 | |
| Gives me some time to think a while and sketch messy ideas in my mind | | 1 | |
| I get carried away with doodling sometimes | | 1 | |
| I like it, it's nice when I get to do it | | 1 | |
| It improves one's thinking capability. | | 1 | |
| I did not doodle | 2 | 3 | |
| Some of them look super amazing | | 1 | |
| Relieving | 1 | 2 | |
| Good | | 1 | |
| I enjoyed this idea in theory however was never able to participate | | 1 | |
| Doodles and movement help me to process through emotions | | 1 | |
| I prefer to keep my doodles private mainly because it's often connected to work I am doing | | 1 | |
| It was a struggle for me to try to doodle and I felt guilty that I wasn't that into it | | 1 | |
| I always forget to doodle | | 1 | |
| I love it and wish I had more time to participate | | 1 | |
| Hard to participate online | | 1 | |
| It's fun to think of new things | | 1 | |
| I have incorporated doodling into my own time | | 1 | |
| I don't know why I haven't doodled | | 1 | |
| Thought provoking and creative | | 1 | |
| Helpful | | 1 | |

Taken together, the previous four tables regarding responses to the April HeNReG feedback forms identify that the participants, whether the group was held in-person or forced online as a result of COVID-19, appreciated the structure of the HeNReG and the opportunities that it provided. Nevertheless, possibly as a result two and a half years of being unable to meet in person, researchers involved with the HeNReG were less inclined to participate fully as the group was intended—both with respect to questing asking and the creation of doodles—as COVID-19 limitations continued on. Most specifically, this resulted in a lack of team mindfulness of which, from their responses provided to the feedback forms, the participants were not directly aware. However, some were able to self-reflect that they did not participate to the extent that they had expected of themselves. As such, it is possible that this identification of their lack of participation came from an

unrecognized need for the importance of team mindfulness to the success of the group. However, this is merely speculation and was not investigated.

4. Discussion

For an online group to be effective at reducing burnout it has been found relevant to create team mindfulness; as such, it is important to identify an effective way to demonstrate team mindfulness in such groups. In finding a lack of team mindfulness not only persistent but increased during the second full year when the HeNReG—a group intended to decrease burnout in researchers—met online rather than in person, the two special features of the group conceptualized with the intent to increase team mindfulness need to be examined for their limitations in this regard. These special features were mentioned previously in the Introduction: the group's diverse membership and the continuous developmental feedback method employed. Employing these special features, assumptions were made about team mindfulness in originating the HeNReG. The relevance of these assumptions to success in eliciting team mindfulness online needs examination to see if the lack of team mindfulness originates from them. Following this examination, the type of online activity found to result in team mindfulness, and thus possibly provide positive results in reducing burnout, will be considered.

4.1. Two Special Features of the HeNReG Intended to Increase Team Mindfulness

The two special features on which the HeNReG was founded are diversity of group membership and the continuous feedback model. Determining the validity of assuming these special features support online team mindfulness will be questioned.

4.1.1. Diversity of Group Membership

Whether it was prudent to consider that team mindfulness would be supported by a diversity of group membership to the HeNReG when the group met online is important. This is especially so since it has been recognized that diversity of cognitive styles of team members can promote group conflict and threaten group cohesion and viability [23]. Recent research [24] on the effect of diversity on team mindfulness confirmed that differences in cognitive styles may reveal differences in interests and values, hampering interpersonal relationships. However, the extent of conflict among members was also found to be dependent on the quality of exchanges between the group members and the group leader [24]. If high quality relationships were developed between the individual members and the group leader, this was found to decrease the likelihood of group conflict, permitting the promotion of team mindfulness [9]. Yet, it has also been found that external threats and mixed messages result in a reduction of team mindfulness [25]. As the external threat of the pandemic was the reason for the HeNReG moving online, limitations imposed by COVID-19 may be a cause of a decrease in team mindfulness when the group met online only.

Diversity of group membership has recently been analyzed as divisible into four categories with different effects [26]. (1) Social diversity decreases conflict and increases affective commitment, (2) informational diversity has no statistically significant impact on conflict and affective commitment; in contrast, (3) value diversity increases conflict and decreases affective commitment, and (4) with increased conflict a mediating effect is found in the relationship between value diversity and affective commitment. In this regard, as a socially diverse group, it was reasonable to assume that diversity of membership would increase team mindfulness in the HeNReG. Concerning the value diversity demonstrated by the group members, it was only during the time that the group met in person that the facilitator was able to demonstrate how the disparate points of view voiced by the members could be added together to create a cohesiveness to the group that encouraged the affective commitment necessary for team mindfulness. Meeting online, as a result of COVID-19 limitations, this demonstration by the facilitator was not possible, as such, it reduced the likelihood of team mindfulness being observable.

What this means is that when the group—initially designed primarily for in-person meetings—met in person, the assumption that diversity of group membership was supportive of team mindfulness was warranted. However, once the group moved entirely online as a result of COVID-19 restrictions, then diversity of group membership was not able to create the cohesiveness to the group to encourage the affective commitment necessary for team mindfulness. It seems that the in-between question asking dialogue during the meetings that the facilitator had with the group members, lost once the group moved entirely online, was a necessary component unrecognized by the facilitator in thinking that meeting online could continue the team mindfulness of the HeNReG.

4.1.2. Continuous Feedback Model

A second important feature of the HeNReG is that it uses a continuous feedback model (separate from the twice yearly formal feedback) to encourage creativity with respect to responses to the writing prompts and regarding doodling. Although the creativity associated with replies to the written prompts was consistent when comparing the in-person contributions with the online ones, the creativity of team members in relation to asking and answering questions of one another and concerning the production of doodles was significantly reduced once the HeNReG moved online, and even more so the second full year of restrictions. Research has found that a reason for this missing creativity may be a result of a lack of humbleness displayed by the group leader [27]. Although the use of a deliberate process, such as the one engaged during the HeNReG, was found beneficial for improving creativity in a team context, if the team leader was perceived to be deficient in humility, this was identified as detrimental to the process. Successful ways to promote the required type of humility of leadership have been identified as acknowledging the strengths of team members and actively seeking their ideas from them [28].

Self-analysis by the group facilitator and in relation to the comments provided by the group members in the year end feedback forms did not indicate the facilitator was wanting in humility with respect to group leadership. This is especially so as the foundation of the group was that the facilitator was considered an equal member of the group and participated as such [14]. Nevertheless, there was a structural difference between the facilitator and the other group members that remained and was more evident once the group moved online only. It was the facilitator who posed the questions eliciting writing prompts each week. Therefore, although the ideas of team members were actively sought by the facilitator, all members were especially aware online that the one integral member of the group was the facilitator. Without the participation of the facilitator, there was no group. Although other members were necessary to the group, no one group member in particular needed to participate for the group to continue.

Regarding participation on the private Facebook group, there were a number of levels open to group members of the HeNReG weekly: (1) responding to the writing prompt; (2) attending the online meeting; (3) asking questions of the group members in relation to their response to the writing prompt; (4) answering questions that were posed; (5) submitting doodles and their descriptions for posting; and (6) observing the discussion without making a comment. There was only one level of participation that had the full engagement of all group members—(1) responding to the weekly writing prompt. Given that all other levels of participation were promoted by the facilitator as being equally important to the function of the online group yet they were not treated as such by the group members, this provides evidence in support of group members considering participation with the facilitator in responding to the writing prompt of greater relevance to the function of the group than any of the other levels of participation available. Thus, regardless of the facilitator expressing humility of leadership, the very structure of the group seemed to indicate to participants that the facilitator was not to be perceived as an equal.

This problem of the facilitator being perceived as different in comparison with the other group members regarding the importance of responding to the writing prompts was further exacerbated concerning the doodling aspect of the group. When the group met in

person, all group members had the same length of time and the same artists materials to create doodles [22]. The time period was the two-hour in-person meeting and the artists materials were ones supplied by the facilitator for use by the entire group. Once the group moved online, few of the participants attended the weekly meeting for the entire two-hour duration. If group members did attend, often it was only to answer the questions posed to them directly. This might mean they spent merely 10 minutes at the meeting. The facilitator, in contrast, was online the entire two-hour period, producing and refining a doodle over this time. Therefore, if participants produced doodles, they were ones done in relation to the time they spent online. Often, these were created hastily with whatever art materials were on hand—usually a pencil. In contrast, the doodles of the facilitator, created over a two-hour period, used bold colors and may have appeared more competent than others because of the length of time taken to produce them. As a result, this may have dissuaded other participants from bothering to doodle. The importance of attractive artists' materials in creating doodles during this academic meeting has been previously noted [22].

This difference between the facilitator and the other participants in the complexity of doodles produced was evident immediately after the first meeting in 2021/22. The doodles submitted at the end of that meeting are seen in Figure 1, with only the facilitator and one participant providing a doodle. As such, rather than being seen as an additional way to help reduce research-related stress (as the doodling was intended), participants may have seen doodling as promoting additional stress. The reason is the participants could have self-judged that their doodles in comparison with the those of the facilitator were sub-standard. This hypothesis is supported by the number of doodles produced by members decreasing during the academic year to the point that only the facilitator was creating doodles over most meetings. However, as the participants were never asked if they felt self-conscious about doodling for this reason, this remains conjecture.



Figure 1. Doodle provided by facilitator (left) and participant (right) after the first HeNReG meeting of 2021/2022 academic year.

Thus, although the continuous feedback model employed was useful in supporting team mindfulness during the in-person meetings of the HeNReG pre COVID-19, it was not once the group moved online. One persistent difficulty after the group moved online was that the participants did not treat their relationship with other group members as equal to that of their relationship with the facilitator. Secondly, group members for the most part did not engage in doodling; thus, this method of continuous feedback was not part of their experience with the group. As such, although a continuous feedback model may be advantageous for supporting team mindfulness during in-person meetings, in transplanting the structure of the HeNReG online, the particular continuous feedback model was unable to establish team mindfulness.

4.2. Online Groups Practices Resulting in an Increase in Team Mindfulness

The group practices of the HeNReG, intended to support team mindfulness, have been found unable to do so once the group moved online entirely. Yet, from the general themes of feedback provided, this lack of team mindfulness in itself did not seem to be missed by HeNReG participants; rather, if mentioned, participant's personal inability to participate created regret over their perceived limitations as a group member. When conducted online, team mindfulness is not a feature of the HeNReG. However, as team mindfulness is supportive of a reduction in burnout by enabling the conditions for work engagement [13], it remains important to understand what type of online practices might support team mindfulness. This is especially so since without equal participation the function of the group might depend on a false consensus [29]. This develops when participants act as if they are in support of the group's interactions and objectives, and may even

believe themselves to be supportive, when members actually disagree with aspects of the group.

Online meetings that appear best able to create the type of team mindfulness supportive of work engagement and having the ability to reduce burnout are not, as might be assumed, those which concentrate on developing mindfulness on an individual basis. In this regard, online groups that support individual mindfulness can alleviate high levels of personal stress and anxiety [30], especially during times of crisis, such as during COVID-19 [31]; however, these online groups are unable to create the type of team mindfulness that leads to work engagement focused on others in successfully meeting the group's objectives [32].

In contrast, the online meetings that have been found successful are those created by online gaming communities. With respect to gaming, online interactions have created communities that are not bound by physical social relationships [33] and, in teens foremost, have been identified to increase the type of feelings of social connectedness necessary for team mindfulness [34]. The COVID-19 lockdowns provided the opportunity for people to develop new social connections through online gaming [35] and to see online gaming as a legitimate activity [33], aiding in the development of the conditions for team mindfulness. Unlike academic meetings, which were seen to suffer in their effectiveness as a result of quickly moving online during COVID-19 [36], online gaming flourished. Gaming is one of the few industries that experienced a higher growth rate during the COVID-19 pandemic than pre-pandemic with a worldwide increase in both money and time spent on gaming and a transition towards multiplayer games [37].

It is important to consider how online gaming compares with the activities of the HeNReG in that online gaming can result in team mindfulness whereas it is not found when the HeNReG meets online. The ways in which the HeNReG—when meeting only in a private Facebook group—is similar to online games are the following: (1) the rules on how to participate are clear, (2) an interest in participating is all that is needed to join, (3) there are consistently new activities in which to engage, (4) the activities of each participant can be viewed by all, (5) there is an obvious structure in which to engage, (6) participation can happen at any time, and (7) there is an end goal for participation—for the HeNReG, decreasing burnout; for online games, winning the game. As such, the HeNReG online meeting has many similarities to online gaming. Structurally, how the two types of activities differ is: (1) there is no leveling-up with the HeNReG as there is with online games, and (2) there is no avatar with which to participate for the HeNReG.

In examining the aspect of leveling-up with online games, it can be considered that this is a required feature for games given that, as a game, they don't necessarily correspond to the player's life in reality. Similar to schooling—which is only abstractly related to the interests of students and thus requires grades and advancement as extrinsic motivation [38] to focus the attention of student—games have points, badges and leaderboards [39] to keep the interest of the player. The HeNReG, on the other hand, is intrinsically interesting to participants [40] as it is set up to reduce burnout and members join because they are experiencing burnout with respect to their research work which they would like diminished. As a result, a lack of extrinsic rewards for participating is not likely the reason team mindfulness was not displayed online with the HeNReG.

In contrast, the lack of an avatar for online use with the HeNReG might be an important reason team mindfulness was not evident in the HeNReG once it moved online. The HeNReG was successful at promoting team mindfulness when the group met in person. The most obvious difference between in-person meeting and meeting online is that participants can't witness each other engaging in space/time. Online games promote the use of avatars to move through virtual space/time as one of their most attractive features [41]. Avatar physical attractiveness and avatar ability to achieve have been found positively related to avatar identification, and to online gamer loyalty [42]. It has been found that gamers adapt their behavior to the characteristics of their respective avatars and design avatars to balance self-enhancement & self-verification [43] and, thus, without an

avatar, it may be difficult for participants in the online HeNReG to feel they can represent their point of view effectively online, as avatars permit visual perspective taking [44].

The point might be made that if the concern is seeing the participants in virtual space/time that video conferencing might have produced the required team mindfulness that a private Facebook group was unable to realize. Using video chatting was the advice that a few of the participants in the HeNReG mentioned in their feedback to Do you have other thoughts/comments on your experience as a participant in the HeNReG this term (especially as a result of COVID-19)? For this reason, it might not be an avatar that is needed but just video linking of all participants.

A previous publication outlined why the HeNReG did not use video conferencing [14] with respect to one video conferencing platform—Zoom. Positive features of Zoom were stated to include the ability to quickly clarify problems, help decrease social isolation and improve the connection of the academic meeting's community of members. Constraints noted were that participants (1) talk longer than they intend to, (2) multitask or become otherwise distracted and (3) become frustrated and fatigued [21]. Zoom also requires a reliable and stable internet, as participants' videos can freeze and at times the participants disappear completely; when they reappear, they may show up on the screen in a different location than previously, leading to temporary confusion [45] with "Zoom gloom" and "Zoom fatigue" [46] the result. Furthermore, with the video on, members of groups using Zoom for meetings are forced to look at themselves during the meeting, and this facing of oneself can be unwanted by participants, as might the concern that they feel they are performers on the screen [47]. Most importantly, though, the HeNReG depends on thoughtful written responses to prompts and doodle creation during a two-hour online meeting, neither of which is best undertaken using video [15]. It is for these reasons that using videoconferencing would not be effective in creating team mindfulness for the HeNReG and that—if they were available—using avatars online might, in a way similar to online gaming.

5. Conclusions

Investigating whether a lack of team mindfulness was consistent with previous years once a research group moved from in-person meetings to those held online, it was found that the deficiency increased. This was noted to result from being unable to replicate aware attention to present perceptions, a necessary ingredient for team mindfulness. The reason for this inability was identified as limitations to two important assumptions of the research group after it moved online—that diversity of group membership and a continuous feedback model were supportive of online team mindfulness. Both assumptions were found flawed in an online environment. Although social diversity can increase team mindfulness, value diversity—which is not mitigated in the online group—is seen to be detrimental to its support. Furthermore, the equality of the group's facilitator to the other group members is called into question once the group moved online because of the special status groups members recognized the facilitator to hold, decreasing participation without group members' necessary awareness of this, as found in the feedback provided by participants.

As a result, the team mindfulness that was demonstrated for this research group—the HeNReG—when the group met in-person, has been found unable to be maintained once the group moved online as a result of COVID-19 restrictions. This result was increasingly so the second full year of these restrictions. When considering what type of online groups have the ability to support team mindfulness, online games were identified. The aspect of these games that promoted team mindfulness was considered to be the inclusion of an avatar for moving in virtual space/time—something that was not a feature of the HeNReG nor could be, as the technology does not currently exist for this option. Given that team mindfulness is one component in helping to reduce burnout in researchers by promoting work engagement, the success of a research group aiming to mitigate burnout

would seem to depend on the creation of an online group that includes the use of avatars to navigate the online space/time.

It is because an online avatar does not exist for the HeNReG that, in beginning the 2022/23 academic year, the facilitator of the HeNReG took note of the group's online limitations and initiated a different responsive change based on the results that have been here presented. As the feature of the HeNReG that successfully continued once the group moved online was the positive relationship that each group member had individually with the facilitator, in continuing this offering intended to help reduce burnout in health researchers, the HeNReG for the 2022/23 academic year has evolved to a one-on-one online meeting between a health researcher and the facilitator—the Health Narratives Research Process (HeNReP). After the 2022/23 year end, it will be seen whether this modification—decreasing the group to two people—will have the ability to demonstrate the type of team mindfulness that has been shown to reduce burnout and promote work engagement in researchers.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy restrictions expected by participants when they agreed to join the Health Narratives Research Group.

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