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Abstract

Bringing our collective experiences of past collaborations through a virtual connection, we created an international research team of 16 multidisciplinary, multicultural, and multilingual academic women called “COVID GAP” (Gendered Academic Productivity) to explore the ongoing challenges and effects of COVID-19. Identifying as insider researchers, we engaged in a two-phase, primarily qualitative research project to better understand the lived experiences of academics during the pandemic. Our past individual experiences with cooperative research informed our roles and responsibilities and how we organized and communicated. This article is a reflection of how COVID GAP has refined our collaborative process in response to an evolving comprehension of our own lessons learned including understanding the nature of cooperative research and that it takes time and effort. From our experience, we provide specific recommendations for group collaborations emphasizing the need to identify a team coordinator to organize efforts, the establishment of a safe and equitable working environment for all involved, and the explicit attention to building a network for research partnerships.

Keywords

academic women, authorship, collaboration, COVID-19, gender in higher education, qualitative inquiry, research collaboration, scholarship

Introduction

Research collaborations are often utilized as an opportunity to expand perspectives, share collective expertise and accountability, while increasing objectivity about a subject. Collaborations can also serve as a learning tool in academia with those who are more advanced, senior scholars, mentoring those earlier on their journeys, junior scholars, to enhance their skills and experience. Shared passion, curiosity, and a commitment to explore and better understand issues or occurrences are also an opportunity to bring researchers together (Abramo et al., 2011; Swanson, 2014). These cooperative experiences in research occur in multiple formations with varying levels of success as determined by both the experiences of the members and the outcomes which we define as products including presentation and publication.

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Reflections on the benefits and challenges of collaborations are now part of the emerging “science of team science” field (Hall et al., 2018; Stokols et al., 2008), although studies mainly focus on research team interactions within engineering, natural, and life sciences (e.g., Ali et al., 2016; Gray et al., 2012; Zdravkovic et al., 2016). Dusdal and Powell (2021) found far less attention has so far been given to collaborations within humanities and social sciences with case studies of team processes remaining particularly rare. This article offers not only a contribution to the broader field of qualitative research as we reflect on experiences of our international research collaboration (with interdisciplinary focus and membership) set up during one of the *most challenging times* in our professional careers, but also offers our gendered perspectives of collaboration as we are a research team of all women. Although we came together as virtual collaborators during the pandemic for the purpose of our original study, this article is specifically about our experiences of working together as a research team. We present summaries of our collaborative projects and scholarly products for context of conclusions in this paper and to use them as measures of success of COVID GAP.

With everyday communication within academia occurring virtually during the pandemic, previously deemed barriers, such as geography, became less of an obstacle. As academia expanded their knowledge and skills into the online environment, opportunities to breach previous obstacles for collaboration grew. For some of us, this transition was simply an extension of our previous work while others experienced a more disruptive change. For all of us, having both our own work and that of our peers affected by only being able to engage online, led us to reconceptualize how we work and professionally interact with others. It also led many of us to reconsider our previous working habits, resources, and perceived barriers. In this process, members of COVID GAP were able to see that factors such as geography, need not serve as obstacles to the pursuit of collaboration. Considering this insight, we joined together as a multidisciplinary, multicultural, and multilingual team cooperating from around the globe through virtual connection to engage in research of our shared experiences as academic women during the pandemic. Each of us brought forth experiences from past collaborations, which shaped how we engaged with other members of the team and the research process more broadly. This article describes our journey, including the experiences of past collaborations, that we brought to the team. We also offer our lessons learned as well as recommendations because for many of us this has been one of the most rewarding, inspiring, and productive experiences in our professional careers.

The Pandemic and COVID GAP

During the pandemic, a time where quarantine and social distancing dictated academic location, scholarly collaborations shifted due to the multiple impacts in both professional

and personal spheres (Bender et al., 2021; Brown et al., 2021b, 2021d; Lambrechts et al., 2021). Through an established shared virtual community, I Should Be Writing with Cathy Mazak (ISBW) on Facebook, our research team of faculty and graduate students joined together in response to a call for collaborators from Kristina. Only two of the 16 members were known to each other before collaboration. While we are located around the globe, we shared a mutual motivation to understand the gendered impacts of the pandemic within higher education, specifically on scholarship. In response to early reports during the pandemic regarding the decline in women’s scholarly productivity (Andersen et al., 2020; Muric et al., 2020), we were motivated to collaborate to explore and understand the lived experiences of not only women academics, but also their experiences in comparison to colleagues, especially male colleagues.

We are from diverse backgrounds identifying as 16 cis-gender multicultural and multilingual women of five different races and ethnicity (two Asian, three Black/African, nine Caucasian/White, one Mexican, and one Middle Eastern), living in five different countries (Poland, Qatar, United Arab Emirates, United Kingdom, and the United States), and formed a research team called “COVID GAP” (Gendered Academic Productivity) in May of 2020 as a result of a call for collaborators placed in the ISBW Facebook group. COVID GAP members range in age from 28 to 60 with a mean age of 40; 14 of us identified as partnered and 12 as parents. Additionally, four of us served as caretakers independent of parenting duties with two caring for elderly parents (including step and grandparents) and two caring for other adult dependents. At the start of our collaboration, five members of COVID GAP were graduate students pursuing their PhD (four have since earned their degrees) and 11 hold doctorates and identify at different ranks, in multiple disciplines, and varying stages of academic life. Collectively, researchers within our group represented 11 disciplines across higher education at the outset of our collaboration (see the Table 1 below).

We provide this information about the members of COVID GAP to both be transparent about our insider identities to the participants in both phases of our research and to highlight our diversity as a collaboration (Brown et al., 2021d). Though we did not contribute to the collected data as respondents, many of the findings and themes resonated with each of us in our varying intersecting identities as we analyzed the responses. By being transparent about our shared identities within the recruitment process as well as in reporting our findings, our intention is to convey our commitment to representing the collective voices of our participants especially in the first phase where we engaged in targeted recruitment of our fellow academic women¹ from within the virtual community that brought us together, ISBW.

Though this article is authored by half of our original team, it includes contributions from the full team as quotations in italics in response to direct questions asked of each member about our experiences as COVID GAP. In a separate article

Table 1. Academic Demographics of COVID GAP ($n = 16$) in May 2020.

Primary Academic Identity	
Writing dissertation	5
Lecturer	1
Instructor	1
Assistant professor	4
Associate professor	3
Full professor	1
Other	1
Stage of scholarly life	
Writing dissertation	2
Writing dissertation & contingent faculty	3
Writing dissertation & research associate	1
Postdoc	1
Assistant professor	3
Assistant professor & administrator	1
Associate professor	2
Associate professor & administrator	1
Full professor & administrator	1
Other	1
Discipline/Academic specialty	
Advertising & public relations	1
Communications	2
Couple & family therapy	1
Criminology & criminal justice	1
Curriculum & instruction, women & gender studies	1
Education	4
Forest science	1
Management	1
Neuroscience	1
Psychology	2
Social work	1

(Brown et al., 2021d), we shared our experiences through a co-constructed feminist-informed autoethnography without attribution of quotes to any singular member. With the goal of unifying our voices in this paper consistent with feminist tenets of research (Harvey et al., 2016), we included quotes in this article from all 16 researchers that were representative of our collective experience.

Each member of COVID GAP responded to questions on our past experiences of research and writing collaborations, our strengths and growth edges as a research team, and our reflections on overcoming challenges. These direct quotes are woven throughout this article as indicated with the use of italics. As qualitative researchers, we hold the firsthand lived experience of participants at the forefront of understanding and exploration of any phenomenon. Essential to our collaboration is the need for both transparency and vulnerability regarding the impact on our identities as women scholars of both COVID GAP and the pandemic. As there is inherent risk in this approach, our decision to harmonize our voices as one is strengthened out of protection for all. This manner of

presentation is consistent with one of the five dimensions of research ethics focusing on workplace relationships in research (DuBois & Antes, 2018), which welcomes diversity and emphasizes treating one another with respect and allowing each person's voice to be heard. By including quotes from all 16 researchers that were representative of our collective experiences, we aimed to unify our voices as is consistent with feminist tenets of research. To further ensure each member's perspective was incorporated into this work, Kristina maintained reasonable deadlines that enabled all who wanted to contribute to be able to do so. Open communication was maintained through email and virtual meetings.

We first present a review of the literature including perspectives of international and gendered research collaborations. We selected these two identities as they have had a large and isomorphic influence on our own collaborative processes. Following this, we describe our collaboration as COVID GAP, including a description of the two phases of our research as well as an introduction to the sister projects that are currently underway. We describe the processes we underwent to create our subgroups in analysis of Phase One data as well as our resulting outputs from this analysis. Throughout these descriptions, we share challenges we faced and a subsequent section highlighting lessons learned from our past collaborations that we brought to our collaboration as well as our own strengths and growth edges as COVID GAP. We conclude by sharing our new knowledge and learnings from the past year of our collaboration in the form of recommendations for other scholars.

Research Collaborations

Research collaborations, defined as “working closely with others to produce new scientific knowledge” (Bozeman & Corley, 2004, p. 609), have become a way for academics to build community while advancing scholarly productivity (Ductor et al., 2018). While collaboration may be a foundational concept to promote learning, there are many variations of the collaborative process (Rakhudu et al., 2016) ranging from the discussion of academic ideas to sharing research facilities. Scholars' ability to engage in such partnerships is founded on a “climate of trust” (Tschannen-Moran, 2000, p. 313) and an understanding that collaborative ventures are “an active process” evolving over the time that the project continues (Rakhudu et al., 2016, p. 4).

Before the pandemic, most fields had already begun to note a decline in single-authored papers and a rise in collaborative research and subsequent multi-authored publications (e.g., Barlow et al., 2018; Kuld & O'Hagan, 2018; Nabout et al., 2015; Wuchty et al., 2007). In their analysis of almost 20 million scholarly papers spanning five decades, Wuchty et al. (2007) concluded that team publications are more prevalent than single authorship with collaborations producing research with increased impact factors and citation rates. Barlow et al. (2018) cited a variety of reasons for this trend including, for

example, changes in data collection methods, the need for varied skill sets in the pursuit of more complex study designs, a move towards interdisciplinary pursuits, and the incorporation of an international perspective. The COVID-19 pandemic further propelled this observed trend as the majority of academia moved remote and virtual with many universities only beginning to reopen in fall 2021.

COVID-19 has created obstacles across academia, but it has also engendered collaborative opportunities for scholarship including international research. Not because this technology was not previously available, but because restrictions related to in-person interactions inspired many people to leverage technology in new ways. With stay-at-home orders in place at various times throughout the duration of the ongoing pandemic, academics had to make explicit efforts to identify and cultivate potential collaborative partnerships. One COVID GAP member shared, *Prior to the pandemic, I looked to my in-person relationships for collaboration and networking, especially through conferences and membership in organizations. After, I looked to virtual opportunities to build those relationships as my interaction with the remote world had shifted. This was especially important for access to fellow women scholars around the globe who may have been feeling similar impacts of the pandemic.*

International Research Collaborations

International collaborations play a significant role in advancing our global understanding of research. Collecting data across a range of countries and incorporating diverse cultural perspectives improves our understandings of phenomena under study beyond what is possible through the same study of experiences in only one context. Lansford et al. (2019) note that depth and breadth of knowledge may be compromised when published literature only reflects studies pursued in high-income Western countries. Research from singular or Westernized perspectives are often lacking inclusivity of all considerations or identities whereas collaboration invites this into the process. Wagner and Leydesdorff (2009) reported that “international collaboration as measured by co-authorship relations on refereed papers grew linearly from 1990 to 2005 in terms of the number of papers, but exponentially in terms of the number of international addresses” (p. 317). Today, international collaborations are encouraged by policy makers and funding agencies to improve the quality of researcher training, to garner more comprehensive knowledge that accurately represents global experiences, and to increase publication with higher impact rates (Jeong et al., 2014). One example of this is the Fulbright Program, currently operating in “160 countries worldwide” with over “400,000 participants” to date (United States Department of State, n.d.) which facilitates and funds competitive opportunities for academics to teach, engage in special projects, or do research abroad and in collaboration. Fulbright is an international program inviting applicants from all over the world to come together for scholarship and instruction.

Kwiek (2016) confirmed Wuchty et al.’s (2007) earlier work in a study across Europe finding that collaborating internationally is the most important predictor of research productivity. Further, Kwiek (2016) determined that these cooperative experiences increased the odds of academics becoming “top performers” in the upper 10% of research productivity as measured through publications and citations. Woolley et al. (2015) cited international citizenship and an interest in applied research as contributing factors to increased international collaborations as well as opportunities such as visiting researchers (e.g., Fulbright), to support these cooperatives. Highest in the fields of science (Bozeman et al., 2015), these collaborations often stemmed from inquiry requiring shared resources such as access to specific populations, technology, or funding. Kwiek (2020) noted a positive correlation between international co-authored publications and increased academic prestige and international recognition; further positioning researchers engaged in such collaborations with additional access to competitive international funding.

Witze (2016) reported that within his review of scientific publications, rates of international collaboration differed:

Within the European Union, the United Kingdom, France and Germany had the highest percentages of international collaboration overall. U.S. authors collaborated most frequently with authors from China, compared with other countries. And scientists from both China and Canada co-authored with U.S. scientists at a higher rather than would be expected from their other international partnerships. (para. 7)

These observations of collaboration are based on evaluation of author identity and location on publications. Further observation of international collaborations noted gender differences.

Gender in Collaboration

Despite the many known benefits of research collaborations including their instrumental role in research productivity and career advancement (Abramo et al., 2011; Adams, 2012; Fox, 2018), research on collaborations suggested continued gender disparities. Women scholars have been shown to collaborate less than men (Bozeman & Corley, 2004; Williams et al., 2018), although like much of the research on collaboration available, this may differ by country and discipline. For example, Abramo et al. (2013) in Italy or Kwiek and Roszka (2021) in Poland both cited that women were found to have higher collaboration rates than men; Fell and König (2016) found women researchers in industrial-organizational psychology were shown to collaborate more than men. Larivière et al. (2013) suggested that when women do collaborate, they are more likely to do so with researchers from the same country though this may also differ depending on the region. For example, Aksnes et al. (2019) found that Norwegian men

were more likely to participate in international collaboration than Norwegian women. They explained that this pattern may be due to the fact that these men were engaged in fields, such as the hard sciences (Bozeman et al., 2015; Witze, 2016), that frequently facilitate these collaborations. When single-gendered research teams (i.e., all women or all men) do form, cited benefits include simplified communications and higher levels of trust between collaborators (Ghiasi et al., 2018; Kegen, 2013; Lerchenmueller et al., 2019).

Efforts to examine discipline-specific collaboration patterns have also been made. In their analysis of published gendered research in economics, Ductor et al. (2018) noted that women economists produce fewer publications than men in their field yet engaged in higher rates of collaboration in the pursuit of scholarship. Further, these women researchers often maintained smaller collaborative networks, electing to partner with the same co-authors over time. The preference to collaborate with same-gendered researchers as noted by Ductor et al. (2018) is consistent with historical analyses of gendered collaboration. Forty years ago, Tyron (1981) observed a notable pattern of male-male collaboration which was more frequent than female-female collaboration in his review of two years of authorship patterns in the *Journal of College Student Personnel*. However, a limitation to this study was the measure for identity was determined by the author's first name which may sometimes be ambiguous, gender-neutral, or non-traditional leading to potential miscoding. Despite past trends, more recent publications rates signal a positive incline in collaboration across genders; Bean and Kuh's (1988) early finding of 19% to the most recent finding by Williams et al. (2018) state that 35% of the articles reviewed were collaborations between genders. This increase is a positive incline though continues to view gender as binary.

Chua and Jin (2020) noted that cross-cultural research presents added challenges to the collaboration process for both males and females, but in different manners. Males may experience more of a task-centered conflict which would impede collaboration while women may encounter a relationship-centered conflict. Nunkoo et al. (2020) discovered differences when looking at research approaches with women research teams employing qualitative methods and male research teams employing quantitative methods. Interestingly, they found that in cross gender publication, the research most often had a female author as the lead (Nunkoo et al., 2020). Further, Lerchenmueller et al. (2019) and Ghiasi et al. (2018) found more single-gendered research teams (i.e., all women or all men), with cited benefits including simplified communications and higher trust between collaborators (Kegen, 2013).

In consideration of the potential impetus for noted historical gendered trends in collaborative research, Baker (2012) hypothesized that men are more likely to collaborate with other men because they are "less likely to read women's research, which in turn leads to women's lower visibility" (as cited by Aiston & Jung, 2015, p. 216). Men are also more likely to cite their own work, and that of other men (Ghiasi et al., 2018), which leads to greater recognition of their work from the

scientific community (Ghiasi et al., 2018). Thus, it has been suggested that women "place themselves at a disadvantage when collaborating disproportionately with other women" (Kwiek & Roszka, 2021, p. 4). Djupe et al. (2019) reported that "men and women get differential returns on their investments in co-authorship... co-authorship appears to boost submission much more strongly for men than women" (p. 1). Noting the findings cited in the literature on both international collaborations and gender within those research teams, COVID GAP aimed to mediate presented obstacles through a collective and shared involvement beginning with our past experiences.

Lessons Learned from Our Past Collaborations

Except for two team members who had not collaborated previously, we each joined COVID GAP with varying levels of experiences with research collaboration including some who *actively avoided collaborations that were not required* by our programs or departments. For those of us who did have experience in cooperative processes, the experiences ranged from partnering with undergraduate students to partnering with senior faculty mentors to *being invited to join projects with more seasoned colleagues in the field*. This wide range made for a variety of experiences in collaborative efforts. In all but once case, the collaborative partnerships were with people we had already met in person before starting the project, whether they were lab mates, students, co-workers, colleagues, or mentors. For the one exception, the research collaboration came together with similar administrative positions in their respective departments and in the years following the initial collaboration, they regularly met in-person at conferences. From these past experiences we navigated our new collaboration focusing on two important past lessons—the necessity to be transparent in roles and responsibilities, and the importance of communication and organization.

Past Lesson 1: Transparency in Roles and Responsibilities

Although we had a mix of beneficial as well as difficult collaborations, some clear trends did evolve from our past experiences. Successful collaborations were built upon a transparent understanding of roles and responsibilities. *We divided the work between us and we exchanged our parts and re-reviewed for each other and it was always a very pleasant experience*. One member also brought their learnings from stalled projects when everything depended on one person to move the work forward encouraging shared responsibility. All members found that having either similar or complementary work styles also helped past collaborations be effective. Relationships between and among researchers impacted the cooperative nature. For example, collaborations that included mentorship were experienced positively by the mentee; *I have...discovered that when you have [someone] interested in*

your development as a researcher, it is easier to motivate yourself to be productive. But this was not always the case when roles were unclear. One member reflected on their doctoral experience, I felt forced to give my dissertation chair authorship on publishing my work. I ended up shelving it for over a decade.

Past Lesson 2: Organization and Communication are Essential

Several of the participants reported that past collaborations were not as productive and, therefore, not as valuable: *It was not a good experience. The lead PI was very unorganized, and everything was very last minute. We did not have a clear idea of what was the role of each person and it didn't go well.* A theme across our bad experiences with past collaborations stemmed from a lack of organization, lack of communication, feeling overwhelmed when others did not *pull their weight*, and disillusioned with how the collaboration worked. *A number of them [collaborations] were difficult. I ended up with having to do most of the work with the other person never being accountable for their irresponsibility.* In some projects, collaborators ended up *"flaking out at the end which was a challenge and frustrating."* For some of us, gender influenced these negative experiences. One participant recounted a situation where she did the work and the male collaborator's contribution was editing the final paper and claiming first authorship. This power differential around gender resonated for many of COVID GAP across their experiences in academia. These two lessons became essential as we navigated through the different phases of our research and subsequent projects and publications.

COVID GAP Collaboration(s)

COVID GAP was established in the spring of 2020 through virtual connection. We regularly met via a videoconferencing platform, Zoom, to discuss our common curiosities, negotiate our research priorities, and to formulate our study's initial design. Our primary research goal was to investigate the pandemic's influence on academic women's research productivity. With the intention of seeking a diverse sample and making our study easily accessible to potential participants, we developed an online survey that included several demographic items designed to gain insight into participants' identities and experiences as scholars within the context of the pandemic. Thus far, we have continued to collaborate on this project for over a year and have pursued two phases of data collection, resulting in several scholarly outputs. We describe these and our works in progress below.

Phase One

Following ethical approval through Adler University's IRB (Institutional Review Board; Kristina's university), we initiated Phase One of our data collection in the summer of 2020. We recruited participants within the same Facebook group that

brought us together noting that its membership, with a common objective of pursuing scholarly activity, reflected the exact population we sought to understand. After six weeks of data collection, we received 141 responses. Duplicate, blank, and incomplete responses were removed from the dataset leaving 101 responses for analysis. Members of COVID GAP met virtually to discuss and organize the data. After realizing the depth and breadth of responses received, we decided to further refine our analyses to ensure that our research fully reflected womxn scholars' experiences within the context of the pandemic. This resulted in our larger group of 16 researchers forming subgroups with varying foci pertaining to identities and issues within academia and analyzing the data with that particular focus. Subgroups formed around the broad topics of (1) personal context, (2) perception, and (3) policy in relation to scholarly productivity within the pandemic. Each subgroup further distilled its emphasis, leading to even more specific considerations of the dataset described below.

As a result of our ongoing collaboration, members of COVID GAP produced several publications and presentations based on analyses of our Phase One dataset, including: one published article, one in press, and four articles under review, two accepted book chapters and one book chapter proposal, and two presentations in service to our universities as well as two current qualitative studies in analysis from additional interviews of participants in Phase One on identity and mentorship. Further, our initial collaboration served as a catalyst for the pursuit of additional collaborative endeavors that are ongoing, including the creation of three sister projects in Poland (data collected and under study), Mexico (data collection ongoing), and Qatar (in development) as well as the creation of Phase Two of our primary study.

Phase Two

While the responses received in Phase One of our data collection provided much insight into the impact of the pandemic on engagement in scholarship of these respondents as well as confirming trends noted in academia more broadly, we identified several additional opportunities for further attention and refinement. For example, while our original research curiosity centered about women's experiences navigating the pandemic while engaged in scholarly endeavors, we concluded that, for some participants, the status of parent rather than identity of women seemed to have a greater impact on the person's experience of scholarly production within the pandemic. Consequently, we determined it important to investigate male-identified academic parents' experiences as well to better understand this dynamic. A more explicit attention to other points of individual intersectionality such as location, relationship status, gender identity, and stage of academic life also helped form our continued research which received approval through Kristina's IRB. Attending to limitations associated with Phase One, we launched Phase Two of our data collection in 2021. Within this effort, we expanded our inquiry

and recruitment across the academy and around the globe. With a specific goal to elicit responses from male-identified colleagues as well as increased numbers of BIPOC and LGBTQ+ identified academics, we recruited across social and professional media networks (e.g., Facebook, Twitter, LinkedIn, and ResearchGate) as well as sent direct emails soliciting support from partner institutions and colleagues to both participate and to forward our recruitment email to others. We also expanded our instrument for Phase Two to include five additional optional opportunities for specific data collection. Analyses of Phase One data collection revealed each of these topics to be factors related to participant's scholarship productivity within the pandemic. These supplementary measures sought information pertaining to (1) experiences of individuals who identified as a member of an academic couple, (2) retrospective pre- and post-pandemic assessments of couple and sexual satisfaction, (3) the impact of mentorship in academia, (4) an assessment of mental health and well-being (including coping responses) as related to the pandemic, and (5) an exploration of the impact of online and mobile tools and academic support networks. Participants were recruited in spring of 2021 with 273 responses to our main survey with open-ended questions, with an 8–15% response rate of those respondents completing the optional surveys. We are currently moving through our IRB for approval to specifically recruit more respondents to these surveys.

To better understand the specific dynamics of each of these factors, a more in-depth exploration was warranted thus inspiring our pursuit of more focused instruments with various subgroups of COVID GAP. With expanded recruitment and a more diverse sample, our intention is to engage in an in-depth analysis of trends first identified within Phase One as well as explore other factors. We have reconvened as a large group to organize and analyze data and develop subgroups as we did in Phase One. For example, the subgroup that initially examined the relationship between personal context (as parents and partners) and scholarly productivity during the pandemic, plans to utilize the broader collected responses to compare findings from a gendered perspective, cultural identities, and experiences of partnered academics with and without children, as well as other factors that may be identified in the data.

Sister Projects

All COVID GAP members had equal access to the de-identified dataset so an agreement was made that we would maintain a shared spreadsheet of future (and “sister”) projects including the idea, the lead researcher, and team members. Sister projects, like looking at gendered academic productivity in Poland, were research agendas that grew from the mission of COVID GAP and included additional invited collaborators. This would allow for further investigation aligned with each member's specific interests and scholarly agenda and the ability to follow-up Phase One findings as well as attend to limitations with data collection and demographics of participants. Not only is Phase Two recruitment of participants complete and under analysis, but our sister projects in Poland, Mexico, and Qatar are at various stages of investigation.

Interested members of the team looked at the original survey designed and co-constructed by a multilingual, multicultural, multidisciplinary team of international woman researchers written in US English with an American English-language participant in mind. These subgroups recreated the survey to develop a nuanced instrument with a culturally responsive flow for each identified sister project.

Polish Perspective

Two members of COVID GAP—who are biological sisters and both in academia—one living in Poland and one in the UK until June 2021 (now in Switzerland), have built a team with two other women researchers from Poland with whom they have previously collaborated. The focus of this sister project is on research productivity and gender through the lens of the Polish cultural and institutional context also covering the issue of disability, institutional support, and the role of mobile and online tools. Based on our Polish peers' feedback form Phase One, we concluded that the survey in English was not the best tool to gain insight into very often—intimate experiences of the pandemic impact among Polish academics. As previous research suggests, lack of the language skills may have prevented individuals from participating in surveys (Wong & Wang, 2008). Although English may be expected to be known and used by scholars across Europe—recent findings show that fluency and use of English as lingua franca is not yet universal in Polish academia (Luczaj et al., 2021).

Beyond the language issue, it became clear that some parts of the American English-language questionnaire were misaligned with the working conditions of academics at Polish universities and research institutions. We decided to restructure and rebuild the questionnaire, adding new questions and reshaping others, to adjust it to specific Polish context affected by the recent higher education system reforms. This included new rules of research quality evaluation which impact the expectations and requirements on research productivity and especially concrete outputs—papers published in prestigious Western journals. We also found that some demographic questions may be perceived as inappropriate (e.g., sexual identity) or simply invalid (e.g., questions on professional position or scientific discipline). Further, as Poland is racially and ethnically homogenous, racial identity was not an appropriate demographic query. Some parts of the survey, intended to be compared, were carefully translated into Polish. The preliminary analysis of data suggests that our predictions about the restrictions of language and context specific issues of the original survey were correct. During less than nine weeks of data collection, the Polish Perspective team gathered 353 completed questionnaires with more than 100 responses in the first week. For further qualitative studies, email addresses from volunteering participants have also been collected in this research.

Mexican Sister Project

One member of COVID GAP who was born in Mexico but lives and works in the United States put together a team of four

Mexican researchers: two living and working in Mexico and one living and working in the UK. For the Mexican sister project, researchers are focusing on academic productivity nested within the cultural aspects of the *Academia Mexicana* (Mexican Academia) and the general productivity experience during COVID-19 of people in higher education. For this sister project, the survey instrument not only had to be translated into the Mexican Spanish language, but also extensive reconfiguration of the original survey instrument was needed. The Mexican Sister team spent the early weeks of the project going over the survey instrument question by question eliminating full sections or changing the verbiage and/or adapting the questions to a more nuanced cultural expectations of academic communication.

Currently, the Mexican Sister project is nearing closing the participation recruitment phase with close to 100 survey participants. The recruitment campaign has encountered mixed results including a perceived lack of interest on the general idea of survey-answering coupled with a commentary on the extent of the survey worked in detriment to the recruitment efforts. Mexican researchers were quick to point that it was a common experience within the country's academia to encounter challenges with recruitment. Moreover, when discussing and unpacking this phenomenon, the researchers found that notions of service or contribution to the field of research in higher studies significantly varied from the lived experiences with Poland and Qatar experiences.

Qatari Project

One member of COVID GAP is located in Qatar and is lead on the Qatari Sister Project in collaboration with an outside researcher with similarly-aligned goals. They have translated the research survey into Arabic and are in the process of submitting to their IRB. In translating the project, the researchers who are familiar with the targeted region of study have developed a culturally appropriate survey instrument in consideration of some of the same translations made by both the Polish Perspective and the Mexican Sister Project. Earlier discussions of the Sister Projects' lived experiences found commonalities not only on the need to adapt the survey instrument to the cultural and linguistic specificities of the individual countries, but also to the COVID-19-related technology fatigue as these research endeavors are occurring later in the pandemic, and cultural expectations and challenges experienced in each of the respective countries.

Outcomes of Phase One Data

Foundational to our collaboration was the first challenge to actually come together to brainstorm, plan, research, and write. Due to the pandemic as well as our international locations across multiple time zones, our relationships occurred virtually communicating via email, text, and some used Slack, a messaging app for business. We shared documents in

OneDrive and Google Drive and held regular Zoom meetings across six time zones of both the full group and subgroups sometimes with as much as 12 hours of time difference between members. During the first six months of our collaboration, we were able to coordinate synchronous Zoom meetings with the full COVID GAP research team due to social restrictions in most countries (meaning in-person classes, parties, sporting events, etc. were prohibited). This unique isolation and/or more flexible availability provided an opportunity for our collaborative relationships to grow in a virtual setting. Our initial Zoom meetings allowed us the opportunity to get to know one another and even see into each other's environments. This facilitated our ability to build a trusting rapport, which has become foundational to our success. Many of us felt our connections were *impressive and would not have happened if we were in our "normal"* [i.e., pre-pandemic] *chaotic lives*. The pandemic seemed to create not only the need for us to come together, but it also created the space for us to collaborate heeding the collective lessons learned from our individual previous experiences.

We navigated all this during a global pandemic with competing demands of remote work, personal obligations, and familial and personal relationship demands while also considering self-care during this time. Most difficult was the struggle to find a time that worked for everyone. We eventually settled on the first Saturdays of the month at 11 a.m. CST to catch the most members, but we rarely had more than 80% of the full team. Once we broke into subgroups, it became easier for the smaller groups to find a mutual time with higher rates of attendance. In the ongoing meetings of the full COVID GAP, which were then stretched out to monthly check-ins, there always seemed to be at least one representative from each subgroup present, allowing for all group members to keep apprised of others' progress and needs. A secondary issue to communication was finding a platform that all had access to or were willing and able to utilize. Though we all had email, the inability to have conversations in real-time was limited by the technology fatigue we all faced as well as the competing demands of email in our professional lives. Text messaging worked for some of the smaller groups and though Slack was a proposed platform for the full group, not everyone was willing to add another app to the growing usage of virtual connection for each of us throughout the pandemic. *The thought of learning how to use one more app or platform made me nauseous—LOL!* Half of the team members connected on Slack; those who did utilized it for collaboration on specific projects within COVID GAP.

As insider researchers, both in our first phase of recruitment within ISBW as well as our second phase as we expanded globally and across identities within academia, it was important for us to recognize our own social and academic location. Though a strength was our diversity in representation (Brown et al., 2021d), it was often that our shared identities served as a catalyst for productivity. For example, in the subgroup focused on participant's experiences as parents and

partners, members highlighted their shared identity, *my identities as a partner and parent very much shaped my subgroup both in my ability to participate and my connection and investment in the topic*. Though all four COVID GAP researchers in this subgroup identified as both partners and mothers, one was in the phase of empty nester which positively impacted her availability in different ways than her co-authors. The other three members with children ranging in age from 4 to 16 were juggling not only their own academic demands, but those of their children. Additionally, two of the team members were actively working on their own dissertations to complete their doctoral degrees. Through overt conversations about contribution and authorship, this group was able to successfully navigate their collaboration; they published two papers—one focusing on the parent identity (Bender et al., 2021) of Phase One participants and the second on their partner identity (Brown et al., 2021b)—and have an accepted book chapter in progress.

The second subgroup focused on research productivity and perceptions during the pandemic. All seven members also identified as partners and six as mothers with children in various stages of development from infant and toddlerhood to teenagers and soon-to-be college children. This, compounded with the academic productivity challenges associated with these busy stages in familial/parental life, was added to the obstacles brought by a disruption of routines and lifestyles by the ongoing pandemic. Even with these impediments, since the start of their collaborative endeavor, two members of this subgroup have completed their doctorates and two have been promoted to new positions. Balance, patience, and levity became integral components of their collaboration. *Our small kids frequently appeared in the Zoom meetings and we immediately said “Hi!” and talked to them as well. It feels good to be casual while actually in a research setting environment*. Members utilized frequent communication via Slack and ongoing negotiation to make progress. This group has one paper under review (Lambrechts et al., 2021) based on Phase One data and the three sister projects emerged from the ongoing discussions and collaboration for this subgroup’s article. The four lead members involved in the sister projects have come from this subgroup, having discussed the ideas and shared approaches in the online spaces created for the subgroup, before creating a dedicated separate Slack working space, to which other “external” collaborators were invited. Additionally, some of the members of this subgroup also have an accepted book chapter in progress.

The third subgroup of members of COVID GAP had the widest range of identities including single to partner and parent to caregiver for seniors. This group admittedly took longer to come together especially with changes in availability of fellow researchers. Part of the overall success of the COVID GAP collaboration was the ability to have members move in and out of projects as they attended to competing demands. Transparency was required in identifying each of our limitations as *working in a supportive collaboration also adds a*

layer of accountability that can increase scholarly productivity. For the third subgroup the multiple shifts in availability and engagement delayed the momentum of their analysis and writing. For example, one member opted to wait to engage in COVID GAP during the second phase of research while another found herself unable to participate in the team at all due to COVID-19. This left three members of this subgroup who have one article proposal that was submitted and accepted for consideration in a special issue and the article (Chance et al., 2021) is currently under review and two team members have also collaborated on a book chapter proposal.

Additional Research Opportunities

As part of the data collection in the first phase, email addresses were requested from volunteers who were willing to be interviewed at a later date to provide more in-depth understanding of their experiences. Of the 101 participants, 54 provided their email for two developed studies on 1) identity, and 2) mentorship. Both research topics included interviews that are currently being qualitatively analyzed for future publication with different groups of researchers from the larger collaborative (Boutelier, Guta, et al., 2021; Brown et al., 2021a). Each group submitted specific amendments to the original IRB including a new Informed Consent and recruited participants from the provided emails. The identity topic is expanding on the transformation of women academic identities during the pandemic. Two of the interviews ($n = 12$) included members of COVID GAP after an amendment to their IRB. The mentorship article included interviews with 15 participants from the 54 respondents of Phase One and is focused on relationships among faculty and between faculty and graduate students within academia. Interviews for both projects have been completed and are in the initial stages of coding and analysis.

Book Chapters

Two book chapters have been accepted and are forthcoming (2022) in an edited collection called, *It Takes a Village: Academic Mothers Building Online Communities*. Five COVID GAP members will be co-authoring a chapter titled, “Barefoot Strangers: Multinational digital epistemologies of academic moms, *mamás, mami, umahat*” evaluating their experience as mothers and friends in an international digital working and caregiving environments that emerged during the pandemic (Boutelier, Martinez-Suarez, et al., 2021). The second group of four members of COVID GAP will co-author a chapter titled, “Kids at the Door: An Autoethnography of Our Shared Research Identity as Academic Mothers in Virtual Collaboration,” centering on their shared academic and mothering identities development (Brown et al., 2021c). This second chapter describes members’ individual engagements in online support communities leading them to their collaboration as well as highlighting the intersection of academia with the

shifts in mothering from younger children in the home, school-age children, children with special needs, and launched children. Additionally, two members of the third original subgroup have submitted a book chapter proposal which is under consideration to be included in an edited text, *Research on Stress in Education: Implications for the COVID-19 Pandemic and Beyond*.

Presentations

Our team has also had the opportunity of sharing our research findings and experiences at Aquinas College and Adler University. The first presentation took place as the invited speakers for the February 2021 Chelsey Lecture Series at Aquinas College. The entire group was invited, and seven women (representing all three research subgroups) participated in this prerecorded, one hour session that was shared via the College's YouTube page and other social media outlets. Our second presentation was live during the Adler University Common Hour Program in May of 2021. The same seven women participated in this discussion about COVID GAP and our ongoing collaboration focusing on what has come out of the Phase One research as just described as well as plans for our ongoing collaboration. Further, this second presentation centered around our identities as faculty and graduate student scholars during the pandemic.

Reflections on COVID GAP

Our experiences echoed what many academics and women were experiencing during the first stages of COVID-19. Moreover, unique for each of our experience in collaboration as a multidisciplinary, multicultural, and multilingual international research team of all self-identified women was a catalyst for two other projects. In addition to the previously listed outputs, seven team members wrote a co-constructed and feminist-informed autoethnography (Brown et al., 2021d). With one additional COVID GAP member ($n = 8$) joining these seven women, we wrote this article on our collaboration experience and lessons learned. The goal of these two non-empirical articles is to share our experience looking at gender and productivity in academia as well as collaboration in research and scholarship in response to the gaps in the literature about collaborations such as ours as presented earlier in this article. As part of the process for these reflective articles, we also asked team members about their experiences as part of COVID GAP including our strengths and growth edges.

COVID GAP Strengths and Growth Edges

Members of COVID GAP selected to participate because we all hoped for opportunities to collaborate with other women who were feeling and struggling with the same things during the pandemic. *When I saw Kristina's post, I was thinking wow I'm not alone, and I just wanted to know what others are going through.* But it was not only this normalization we were

seeking, but the opportunity to engage in a research collaboration focusing on the pandemic experiences of fellow academic women—learning about ourselves—while learning from each other. Though our goal was to “lean in²” to our shared identity, we discovered so much more as *our strengths are that we are a very diverse, interdisciplinary, international team that is committed to a common goal.*

For two team members, it was their first collaboration and for others, it was the preferred approach, *I had engaged in a single author publication previously and missed out on so much of what I love about research.* As we entered the first phase of data collection, we created multiple opportunities to get to know each other better by connecting across multiple platforms. We became more than colleagues sharing our experiences both personal and professional. *This project finally allowed me to find a group of women who understand me—as a woman, mother, educator, and PhD Candidate.* Essential to this process was our ability to support the mutual acceptance of our multiple identities—*it allowed me not to be fragmented. I was working on this project as a researcher, as a mother, as a woman, so I feel I brought my whole [self] to this project.*

Only two participants (sisters who work in two different fields and live in two different countries) knew each other prior to collaboration, while for the remainder, we had never met. For all of us, this was the largest group we had worked with and the first time most of us had worked on an interdisciplinary, international collaboration with all women.

While we were researching the impact of the pandemic on research productivity, we ourselves were trying to be productive - research and write for dissemination. But our own lives were affected too - many of us have children or are responsible for elderly parents. We have busy work lives, and many have been ill or suffered financially during the pandemic. The empathy and understanding we had for each other as collaborators and for our study participants has been amazing. I believe that it is at least partially because we - the collaborators - are all women.

In addition to this network and relationship building, several of us learned about various aspects of research as it applied to different fields and expanding our skills. For example, *I have learned more about NVivo and other specifics related to qualitative methodology.* Thus, this collaboration became a tool for the advancement of our academic productivity along with building a network of like-minded scholars that we can draw upon for future projects. From COVID GAP, we share two lessons learned specifically about collaboration.

Lesson 1: Collaboration is a Negotiated, Evolving, Recursive, and Transformative Process

From our Phase One data collection and writing up our findings as well as the evaluation of our strengths, growth edges, and challenges both in our research and as a research

team, we find ourselves continually evolving. This confirms what other scholars have found about collaborative projects. Essentially, the lesson learned was

Collaboration is transforming in the sense that you do not leave the same way you came in: (1) there's some sort of change; (2) you give up part of yourself; (3) something new has to be created; and (4) something happens differently because of the process (Thomson & Perry, 2006). (as cited by Rakhudu et al., 2016, p. 4)

Furthermore, the COVID GAP research team also found that collaboration, especially the positive experiences, was a welcomed by-product of a well-negotiated and recursive process. . As we continued to get to know each other better and assert our specific interests and foci, additional opportunities for both presentation and publication through collaboration emerged beyond the second phase of research where we expanded both our survey and data collection process as well as our recruitment of participant. This article is an example of additional opportunities.

Lesson 2: Collaboration Takes Time and Effort

It should be noted that COVID GAP was not without our share of struggles, even some that replicated past experiences. One subgroup was delayed in submitting their paper as they had the most movement of group members. Reflecting on the experience, the team could have used a strong team leader who was better connected to the overall project. The area of focus of that subgroup was not the primary area of any of the team members, which could also have led to disillusionment and lack of commitment. A second team member stepped up to take over as the lead 4 months after the project was started. This change did help push the analysis and writing forward, but much of the work was done by two of the three team members with the third member sporadically contributing to the project. Overall, this subgroup remained committed, and their article is currently under review for a special issue where their abstract was accepted.

Recommendations for Collaboration

We have shared our origins, the outcomes thus far, ongoing projects as illustration of our productivity, and our past experiences that informed our experiences of collaboration prior to COVID GAP as well as our own lessons learned. From this, we share recommendations for collaboration beginning with some consistent recommendations that have been defined across academia that we would be remiss in not stating. Important for success is to create and be open to trusting relationships both with team members and co-authors as well as in the collaboration process. This can be enhanced and encouraged by managing expectations, clarifying commitments, having designated roles and responsibilities on each project, delineated timelines and firm deadlines at each stage, and shared goals for

outcomes. Foundational to collaboration, it is essential to first define roles and responsibilities (within the group, as described in the IRB application, and in terms of access to the data), but to also realize this is a fluid conversation as the research evolves. We present three specific recommendations for research collaboration based on our experiences as COVID GAP

Recommendation 1: Identify a Team Coordinator to Organize Efforts

An important established role is a team leader, or in our case can be translated as a team coordinator with an organizing function. As the initiator of the collaboration, Kristina maintained an organizing role within the large group scheduling Zoom meetings, taking minutes, and maintaining the shared access to the research in OneDrive. This included taking lead on submitting necessary applications for ethical permissions for the research. Kristina is at a US-based institution, and the research team received IRB (Institutional Review Board) approval including research, ethics, and compliance certifications such as CITI (Collaborative Institutional Training Initiative) which is faculty and student training for general research and to work with human subjects from each team member.

From the outset of COVID GAP, Kristina was clear that she did not want to be “first author” on all publications, but that she felt more comfortable in the role of team coordinator to aid in our success. From previous collaborations, she had learned the importance of having *multiple “products” moving forward at once so that if there were any struggles it would not impact the progress of the overall research project.* This evolved into development of multiple subgroups and teams with their own negotiated structures regarding both organization and authorship with Kristina maintaining the role of coordinator of the full team including securing ethical approval. Having her serve as coordinator of COVID GAP rather than lead author on all projects allowed the subgroups flexibility to pursue avenues with the data that were of specific interest to them instead of focusing on a single person's vision. The only exception to this is with the sister projects which built upon the original IRB application but gained research and ethical approvals through their own institutions.

Recommendation 2: Create a Safe and Equitable Space for All Involved

We also recommend that when academics collaborate, it is essential to ensure that the collaboration is healthy, supportive, and conducted in safe spaces. Previous research has shown that women in some fields encounter collaborative environments that are unhealthy and subsequently not productive or beneficial (Ductor et al., 2018). As women academics and researchers, we aimed to be both graceful with each other and mindful not to reproduce the norms that had historically

created gendered barriers in research. To sustain the relationships, it is necessary for collaborators to *be transparent* and make sure that contributions are equitable. Transparency may have an even more important role when collaborating in a virtual environment. As we had never met in person before our collaboration, the constant communication and openness allowed for a strong level of accountability and trust to be built ensuring participation while reinforcing our ability to have productive outcomes from this collaboration. However, due to the many roles women hold especially as highlighted by the pandemic (Bender et al., 2021; Brown et al., 2021b), we also recommend prioritizing self-care while also maintaining a clear focus on one's own professional development, career trajectory, and academic goals. *While your academic status may be an important part of your identity, it is only one element. Do not apologize for all the elements of your life and do not sacrifice them for [your] academic status.*

Recommendation 3: Build a Network for Collaboration

Our final recommendation is that women academics and researchers build a network of scholars for opportunities to collaborate on multiple projects. Prior to the pandemic, collaborations typically originated from established relationships or introductions and meetings at conferences. With the onset of the pandemic, the majority of academia shifted to a remote environment encouraging virtual connections in lieu of in-person contacts. Social media as well as professional sites such as ResearchGate ([ResearchGate.net](https://www.researchgate.net)) and LinkedIn ([Linkedin.com](https://www.linkedin.com)) can be utilized to seek out fellow scholars with shared interests and research genders. COVID GAP met in response to one academic seeking out like-interested scholars in exploring a phenomenon with personal impact. Members self-selected engagement in the research team in consideration for their own professional (and personal) needs and goals. Utilizing digital collaboration tools, such as those used by COVID GAP, mastered during the pandemic will strengthen continued and new networks post-pandemic. Our collaborative research experience confirms the effectiveness of having a solid network of willing collaborators. By providing not only a negotiated safe space to work together, we are also producing knowledge that benefits an area of mutual interest and investment, and fostering accountability, growth, and positive cooperative instances of work that serve as counteracting measures against the challenges cited in the literature of international gendered experiences of collaboration. The impact of the pandemic on international scientific collaboration has yet to be determined as available literature regarding these experiences was pre-pandemic. We hope that this article invites discourse and contribution about not only Covid-19, but also the context and processes undertaken by scholars during the pandemic and the effect it will have on global research.

Conclusion

Though our past experiences with collaboration formed each of us, through joining COVID GAP our lessons learned were collectively brought to the team to facilitate our successes. We had found past collaborations to falter in terms of actual productivity and as demonstrated in this article, this international and interdisciplinary research team has produced six articles at various stages, two book chapters plus a book chapter proposal, two presentations, and five current projects (three sister and two qualitative studies) with continued potential for ongoing scholarship. This success was not simply peer-reviewed publications but new learning, new peers, and a new normal for each of us in future research collaborations. We honored multiple perspectives from all team members at each stage of the research process. Through transparency of needs and ability, we found our developing experience to be *different than any expectations I could have had ... and much better than I would have imagined.* We collectively reflect that COVID GAP has helped beyond the visible publications and presentations. *Leading on a paper co-authored with a few members of the team has given me confidence to set up and lead on future projects, including with researchers senior to me.* While academic productivity is aligned with the structures of advancement and promotion in academia and our scholarship through COVID GAP provided each of us with benefits to our individual career trajectories, it has been the relational learnings for most of us that has been most valuable. Further, these relationships will carry us to new collaborative opportunities in the future. *I believe working with this group has allowed me to see myself as a researcher... something I have never seen myself as. I believe that because of this group, I have now a stronger identity in an academic world.*

Perhaps, one of the most rewarding challenges we overcame with our collaborative research was reconceptualizing our own identities as women academics. Our identification as academics (no matter what the level or career stage) proved to be essential through our collective as we supported each other, provided grace for each individuals' situation, and experienced authentic collegiality that we had not received in previous collaborations or were missing by working remote as a result of the pandemic. The co-constructed resilience through collaboration, encouragement, and accountability that resulted from researching about the challenges and struggles with academic research productivity while engaging in efforts to be academically productive during COVID-19 served as motivation when we wavered. This meta-awareness exercise in resilience-though-motion proved to be successful by allowing the cognitive space and mental energy needed by each of us to keep moving forward. We were not dependent on one singular leader or project but were able to diversify and tap into our individual strengths and skills for the benefit of the whole.

While the future of COVID GAP may be unknown at this point, we remain optimistic about the experiences and lessons learned especially as we continue to work together on Phase Two

data in our subgroups and the described sister projects. As we have shared our lessons learned, we continue to incorporate those into our current processes while also individually developing and growing as scholars in ways that fit each of our disciplines. For now, we are resolute in knowing that through COVID GAP, our experiences as a multidisciplinary, multicultural, and multilingual international research team of academic women have far exceeded any expectations held when responding to the initial call for collaboration. It has reassured each of us that *to have these women out there in the universe that [we are] connected to makes me feel part of something larger than myself.*

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Notes

1. The authors would like to identify the use of the word “womxn” to represent voices of both biological women and non-binary individuals. Membership in ISBW is exclusive to this identity as one of the criteria. The team has used and not used the word depending on representation of selected respondents and appropriate to the context. The members of this research team all identify as “women,” therefore we use the word “women” in reference to ourselves.
2. “Lean in” is a phrase popularized by the 2013 book, “Lean In: Women, Work, and the Will to Lead,” by Sheryl Sandberg.

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