

Conducting eating disorders research in the time of COVID-19: A survey of researchers in the field

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Abstract

The COVID-19 pandemic has impacted research around the globe and required shuttering of research programs and the implementation of procedural adjustments to ensure safety. This study sought to document COVID-19's impact on eating disorders (ED) research, which may be particularly susceptible to such disruptions, given its focus on individuals who are physically and emotionally vulnerable. We invited ED researchers from editorial boards and scientific organizations to complete a quantitative/qualitative survey about: COVID-19's current and future impact on ED research; areas of concern about research disruptions; and effective strategies for conducting and supporting research during and after COVID-19. Among 187 participants, many had moved studies online and/or shutdown part of their research. Across position types (permanent, 52.7%; temporary, 47.3%), participants reported high concern about data collection, recruitment, and securing future funding. Those holding temporary positions reported significantly greater concern about COVID-19's impact on their career and greater stress than participants in permanent positions. Strategies for dealing with research disruptions included: employing technology; reprioritizing goals/tasks; and encouraging collaboration. Results underscore the high levels of stress and disruption caused by COVID-19. We echo calls by our respondents for support for early career scholars and advocacy for additional resources for research and scientists.

KEYWORDS

coronavirus, COVID-19, eating disorders, methodology, online research, research methods, stress, telehealth

The outbreak in December 2019 of the novel coronavirus SARS-CoV-2 (COVID-19) and the subsequent pandemic has prompted numerous governments worldwide to temporarily stop or restrict “nonessential activities.” Governments have issued stay-at-home orders for nonessential workers, and “stay healthy” orders (e.g., wear protective clothing or gear and maintain safe distances) for essential workers, in efforts to reduce the risk of COVID-19 infection. These orders have impacted research activities from the outright shuttering of many research facilities or programs to the implementing of numerous procedural adjustments (e.g., switching to online data collection or virtual intervention sessions) to ensure compliance with safety requirements. Some scientists conducting animal studies have had to

ethanize some or all of their animal colonies (Parry, 2020, April 10). Academic conferences have been cancelled well into 2020, reducing the opportunity for information sharing, networking, and technical training activities commonly offered at scientific conventions. Finally, experts are warning about dire consequences of the pandemic for the academic job market, with outlooks expected to be especially grim for early career scholars such as graduate students or postdoctoral fellows (Keslky, 2020, April 21; Wood, 2020, April 21).

While there is a rapidly growing literature on the clinical presentation and correlates of COVID-19 infection—indeed, a PubMed search on April 21, 2020 using the search term “COVID-19” identified over 5,600 articles—we were unable to find studies of how researchers (regardless

of field of interest) are responding to and coping with the disruption of their research-related work. We recognize that many eating disorders colleagues have multiple responsibilities beyond their research role, such as teaching, clinical, or administrative duties. Our interest in the present study, however, was on the *research* impacts of COVID-19.

As Editors of the *International Journal of Eating Disorders (IJED)*, we (RSW, KLK) were interested in hearing from eating disorders researchers, and the individuals who generate (as authors) or evaluate (as reviewers) the research that gets published in the *IJED*, in regards to four overarching questions: (a) the impact of COVID-19 on eating disorders research now and in the foreseeable future; (b) the level of concern about COVID-19-related disruptions of research and the potential impact of these disruptions on individuals' careers; (c) strategies respondents thought to be effective in coping with COVID-19-related research disruptions; and (d) respondents' suggestions for how the *IJED* or the field should respond to help researchers move through and beyond the current crisis.

To address these aims, we conducted an anonymous survey of quantitative and qualitative items among eating disorders researchers. Quantitative questions focused on the perceived impact of COVID-19-related research disruptions. We hypothesized that respondents in secure employment positions (e.g., tenure or permanent contracts) would report less stress and less concern about potential adverse research or career impacts, than would respondents in time-limited (e.g., tenure-track or non-permanent contracts) appointments. The primary goal of the qualitative, open-ended questions was to describe participants' strategies or suggestions, and we did not pose or test any hypotheses based on the qualitative data.

1 | METHODS

1.1 | Sample

Four groups of researchers were selected for inclusion in the survey. The first group included all editorial board members of *IJED* ($N = 96$) and the *European Eating Disorders Review (EEDR)*, ($N = 51$), as well as the "senior" board members of the *Journal of Eating Disorders (JED)*, ($N = 53$). The second group included all current members of the Eating Disorders Research Society (EDRS, $N = 252$), a global organization of eating disorder research experts. The third group included members of a Special Interest Group (SIG) ($N = 212$) for early career scholars that is organized by the Academy for Eating Disorders, the world's largest professional organization in the field. Finally, the fourth group included ad-hoc reviewers (non-editorial board members) who had provided three or more reviews of an *IJED* manuscript in the past 12 months and who ($N = 77$). Membership in these four groups was not mutually exclusive (e.g., 90 EDRS members serve on at least one of the three journal boards; and 37 ad-hoc reviewers are also either a member of the EDRS or of the SIG, resulting in an estimated 614 unique individuals who received at least one invitation.

Initial survey invitations to members of journal boards and to ad hoc reviewers were sent by the first author (RSW). SIG members were invited by the co-leaders of the SIG via email, followed by a reminder tweet with a link to the survey. EDRS members received one survey invitation from the

EDRS office with no follow-up. *IJED* board members were reminded of the survey in the context of two follow-up messages containing informational material related to *IJED* board service. Finally, all invitation emails encouraged recipients to forward the survey link to other eating disorders researchers. Given the diverse recruitment methods and follow-ups, and the unknown number of individuals who received the survey link from colleagues, we did not attempt to calculate a response rate.

Of the 229 individuals who answered "yes" to the consent question of the survey, 30 did not provide any responses. An additional 12 respondents did not complete the question about type of position (i.e., tenure/permanent contract position, nontenure/nonpermanent contract position), resulting in a final sample of 187 participants (see sample demographics in Results below). Due to missing data on some questions, sample sizes vary for responses to specific questions.

1.2 | Survey procedure and questions

The invitation email asked for participation "...in a brief *IJED* survey about COVID-19 related disruptions to eating disorders research. We hope you will share strategies you are employing to cope with these impacts; your concerns about the current pandemic's impact on your future research program or career; and your thoughts or suggestions on how *IJED* and the eating disorders research community at large could support research during and after COVID-19." The invitation further specified that: the survey was anonymous; only one response was possible from an IP address (i.e., no multiple submissions permitted); and participation was voluntary, with all items being "skippable," yet completion of all items was encouraged. The survey opened with a consent statement asking respondents (no, yes) whether they agreed to complete the survey. The survey opened on April 10, 2020 and closed on April 20, 2020. The survey was approved by Wesleyan University's Institutional Review Board.

This mixed-method survey (a copy of the survey is available via an online supplement) included 9 Likert-scale items measuring concern about COVID-19 disruptions (rated from 0 = no concern to 10 = extreme concern) or highest level of stress experienced since the outbreak of the pandemic (0 = no stress to 10 = highest level of stress imaginable). One item asked respondents to characterize the proportion of their eating disorder research that had to be completely shutdown due to COVID-19, using six options (from 0 to up to 100% in 20% increments). The survey included three categorical items (yes, no, do not know/does not apply) that asked participants whether they had moved their studies online, whether they were anticipating making changes to their research practices, and whether their institution had made policy changes, in response to COVID-19. These categorical items were followed by open-ended questions where respondents could expand on their answers (respondents were instructed to skip the item if the answer to the preface question was "no" or "don't know/doesn't apply"). Three additional open-ended questions asked about strategies the respondents had found most effective for dealing with COVID-19 in terms of their research, changes the eating disorders

research community should make to support researchers during and post-COVID-19, and changes *IJED* should make to support researchers during and post-COVID-19. A final open-ended question asked whether the respondent felt that the survey had missed an important question and, if so, what question should have been asked. Responses to the question about changes *IJED* should implement are not reported here because they were the subject of a recently published *IJED* editorial (Weissman et al., 2020).

To describe the sample, in a final set of questions, participants were asked to report their gender (**check one**: male, female, transgender male, transgender female, gender variant/non-conforming, don't wish to answer), type of position (**check one**: position is not in tenure-track or is non-permanent, position could lead to tenure or a permanent contract, but I have not yet reached this status, or position is tenured or permanent), institutional location of their research appointment (**check one**: 11 examples such as psychology, nursing, etc., and "other"), and the country where they hold their primary research appointment (a drop-down menu of countries in the world).

1.3 | Data analyses

1.3.1 | Quantitative analyses

Descriptive statistics were calculated for quantitative items. Chi-square tests and analyses of variance (ANOVAs) were used to test our hypothesis that individuals holding permanent positions would differ from those holding temporary positions. To adjust for multiple comparisons, Bonferroni correction was applied to the ANOVAs ($p = .05/10 = .005$). In addition, number needed to take (NNT) (Kraemer, Neri, & Spiegel, 2020) and Cohen's *d* were used to estimate effect sizes for categorical and continuous variables, respectively.

1.3.2 | Use of qualitative data

Responses to open-ended questions were grouped into thematic categories, as follows. For each open-ended question, the first and second authors independently developed a set of themes to capture the responses. After discussion, a final set of themes was adopted, with each theme being required to capture at least 10 responses to the open-ended question. Two authors (RSW, KLK) divided up the task of tallying responses by thematic category. Because our goal of reporting the open-ended responses was strictly descriptive, we made no attempt at establishing reliability of the coding of major themes.

2 | RESULTS

2.1 | Sample description

Far more women ($n = 141$, 75.4%) than men ($n = 43$, 23.0%) participated in the survey ($n = 3$ [1.6%] respondents selected "don't wish to

report"). More respondents held permanent positions ($n = 99$, 52.9%) than held either a position that possibly could lead to a permanent appointment ($n = 30$, 16%), a non-permanent position ($n = 35$, 18.7%), or an "other" position ($n = 23$, 12.3%). The latter three position categories were combined for subsequent analyses ("non-permanent": $n = 88$, 47.1%). Of the 182 respondents providing information about the type of institution where their research appointment was held, a majority reported positions in psychology ($n = 78$, 42.9%) or psychiatry ($n = 67$, 36.8%) departments; the next largest subgroup reported appointments in medicine (not psychiatry, $n = 14$, 7.7%). The rest of the sample selected various other university departments (e.g., public health), research institutes, non-academic hospitals, or governmental appointments (a complete listing of departments is shown in Table S1).

About 20% (41/187) of individuals did not answer the question of where in the world they held their primary research appointment. Of the 146 respondents who provided information, 87 participants (46.5% of total sample, 59.6% of sample responding to this item) selected "US" and 59 participants (31.6% of total sample, 40.4% of those responding to this item) selected another country (Australia, $n = 12$; Canada, $n = 10$; Germany, $n = 7$; Italy, $n = 5$; the United Kingdom, $n = 5$; countries with <5 participants included Argentina, Austria, Belgium, China, France, Luxembourg, Mexico, New Zealand, Norway, Portugal, Sweden, and the Netherlands).

As shown in Table 1, men were more likely than women to report holding a permanent position (Chi-Square [$df = 1$] = 8.45, $p < .004$, NNT = 4). Specifically, more men held a permanent appointment ($n = 31$, 72.1% of male sample) rather than a temporary position ($n = 12$, 27.9% of male sample); in contrast, among women, slightly fewer women ($n = 66$, 46.8% of female sample) reported holding a permanent versus a temporary ($n = 75$, 53.2% of female sample) position. Because position type and gender were significantly correlated, we conducted unplanned post-hoc analyses comparing male and female respondents. Due to small cell sizes, we did not test for an interaction term of sex by position type.

2.2 | Quantitative data: Impact of COVID-19 on research programs and on the researchers

Descriptive statistics and planned comparisons across position type are shown in Tables 1 and 2 chi-squares and ANOVAs, respectively. Post hoc comparisons for continuous variables across gender are found in Table 3 (ANOVAs). With two exceptions (noted below), none of the planned comparisons across position type was statistically significant. Of the unplanned comparisons, only two showed statistically significant gender differences (categorical variable comparisons, all nonsignificant, are available upon request).

2.2.1 | Transitioning to online settings and amount of research shutdown

About half of respondents (48.5–52.3%; see Table 1) indicated that they had transitioned at least part of their research to an online

TABLE 1 Chi-square test results by position type

Variable	Total sample		Tenured		Other		Chi-sq (df)	p
	N	Percent	N	Percent	N	Percent		
Gender ^a							8.45 (1)	.004
Male	43	23.4%	31	72.1%	12	27.9%		
Female	141	76.6%	66	46.8%	75	53.2%		
Transition ED studies to online							0.13 (1)	.605
No	93	49.7%	51	51.5%	42	47.7%		
Yes	94	50.3%	48	48.5%	46	52.3%		
Future changes to research practice ^b							0.02 (1)	.894
No	133	71.1%	70	70.7%	63	71.6%		
Yes	54	28.9%	29	29.3%	25	28.4%		
Change in performance evaluations							0.31 (1)	.578
No	128	68.4%	66	66.7%	62	70.5%		
Yes	59	31.6%	33	33.3%	26	29.5%		

^aThe N and percentages for Gender do not total to 187 or 100%, respectively, because three individuals (1.6%) responded "don't wish to report".

^bRespondents answering "no" or "too soon to tell" were combined into "no" for this item.

setting. On average, respondents reported that about 20–40% of projects (i.e., score = 2 or 3) had been *shutdown* due to COVID-19 (see Table 2). Interestingly, only 15% (28/187) of respondents reported that *none* of their current eating disorders research (i.e., score = 1) needed to be shutdown.

2.2.2 | Research- and career-related concerns

As shown in Table 2, on average, the highest levels of research-related concern were related to data collection, recruitment, and securing future funding, intermediate levels of concern were found regarding staffing and budgets, and the lowest scores were found for concerns about procurement of research supplies or obtaining institutional approvals. Of note, statistically significant differences (with a large effect size, $d = 1.2$) were found comparing respondents holding permanent positions versus those in time-limited positions on ratings of how concerned they were about the impact of COVID-19-related research challenges on their future career in terms of promotion and/or career advancement. Those in temporary appointments reported far greater concern than those in permanent positions.

Unplanned post hoc analyses found statistically significant gender differences in two variables, each with medium effect sizes: concerns about future career impacts ($p < .001$, $d = 0.71$) and concern about staffing ($p < .004$, $d = 0.50$). Specifically, women reported higher levels

of concern about future career impacts, while men reported higher levels of concern about staffing than women.

2.2.3 | Stress

Overall, respondents reported high levels of stress, and those holding non-tenured/temporary positions reported significantly higher stress levels than respondents with permanent positions ($p < .001$, with a medium effect size of $d = 0.50$).

2.2.4 | Changes to future research practices

Only a few respondents (14%, 20/187) anticipated making *no* changes to their future research practices; more than half of the respondents (57%, 107/187) indicated that it was "too soon to tell," while about one-third (30%, 55/187; 29.3% of those in permanent positions versus 28.4% of those in temporary positions, *n.s.*) of respondents expected making changes to future research practices because of COVID-19.

2.2.5 | Institutional policy changes

Most respondents (68.4%–70.5%; see Table 1) reported their institution had not yet made any changes to performance evaluations.

TABLE 2 ANOVA test results by position type

Variable	Total sample						Position						F (df)	p	Cohen's d	
	Tenured			Other			Tenured			Other						
	N	M	(SD)	Median	N	M	(SD)	Median	N	M	(SD)	Median				
Amount of research shutdown ^a	184	2.45	(1.62)	3	97	2.42	(1.61)	3	87	2.48	(1.63)	3	0.06 (1,182)	.802	0.04	
Concerns																
Staffing	186	3.73	(3.15)	3	99	4.00	(3.07)	5	87	3.43	(3.23)	3	1.54 (1,184)	.215	0.18	
Budget	186	3.73	(2.97)	3	99	3.84	(2.95)	4	87	3.60	(3.01)	3	0.30 (1,184)	.583	0.08	
Data collection	187	6.22	(2.99)	6	99	5.92	(2.92)	6	88	6.57	(2.94)	7	2.29 (1,185)	.132	0.22	
Recruitment	186	6.15	(3.17)	7	99	6.17	(2.96)	7	87	6.13	(3.40)	7	0.01 (1,184)	.923	0.01	
Institutional approval	185	2.87	(2.95)	2	99	2.57	(2.72)	2	86	3.22	(3.17)	2	2.29 (1,183)	.132	0.22	
Supply procurement	184	2.49	(2.82)	2	99	2.27	(2.66)	1	85	2.75	(2.99)	2	1.33 (1,182)	.251	0.17	
Future funding	182	6.48	(2.85)	7	96	6.08	(2.87)	7	86	6.92	(2.77)	8	3.97 (1,180)	.048	0.30	
Impact on career	157	4.92	(3.42)	5	76	3.08	(2.75)	2	81	6.65	(3.08)	8	58.6 (1,155)	<.001	1.20	
Stress level	183	6.70	(2.22)	7	96	6.19	(2.34)	6	87	7.26	(1.93)	7	11.38 (1,181)	.001	0.50	

Note: Aside from the item asking "Amount of research shutdown" (see below), all other items were rated on a 10-point scale from 0 (no concern/no stress) to 10 (extreme concern/extreme stress). Abbreviations: M, mean; SD, standard deviation.

^aThe "Amount of research shutdown" item was coded on a 6-point scale as follows: 1 = 0% of research shutdown; 2 = up to 20% of research shutdown; 3 = up to 40% of research shutdown; 4 = up to 60% of research shutdown; 5 = up to 80% of research shut down; 6 = up to 100% of research shutdown.

TABLE 3 ANOVA test results by gender

Variable	Gender												F (df)	p	Cohen's d						
	Total sample						Male									Female					
	N	M	(SD)	Median	N	M	(SD)	Median	N	M	(SD)	Median				N	M	(SD)	Median		
Amount of research shutdown ^a	184	2.45	(1.62)	3	42	2.60	1.59	2.5	139	2.40	1.63	3	0.46	(1,179)	.501	0.12					
Concerns																					
Staffing	186	3.73	(3.15)	3	43	4.91	2.88	5	140	3.37	3.12	3	8.27	(1,181)	.004	0.50					
Budget	186	3.73	(2.97)	3	43	4.14	2.95	4	140	3.60	2.94	3	1.11	(1,181)	.294	0.18					
Data collection	187	6.22	(2.99)	6	43	6.02	2.53	6	141	6.33	3.00	7	0.38	(1,182)	.540	0.11					
Recruitment	186	6.15	(3.17)	7	43	6.26	2.92	7	140	6.08	3.25	6.5	0.10	(1,181)	.749	0.06					
Institutional approval	185	2.87	(2.95)	2	43	3.58	3.21	3	139	2.64	2.78	2	3.49	(1,180)	.063	0.33					
Supply procurement	184	2.49	(2.82)	2	42	3.33	3.28	2	139	2.26	2.64	1	4.75	(1,179)	.031	0.39					
Future funding	182	6.48	(2.85)	7	42	5.98	2.72	6.5	138	6.62	2.88	7	1.63	(1,178)	.203	0.23					
Impact on career	157	4.92	(3.42)	5	35	3.14	3.36	1	119	5.45	3.25	6	13.3	(1,152)	<.001	0.71					
Stress level	183	6.70	(2.22)	7	43	6.19	2.59	5	137	6.88	2.08	7	3.18	(1,178)	.076	0.31					

Note: Aside from the item asking about "Amount of research shutdown" (see below), all other items were rated on a 10-point scale from 0 (no concern/no stress) to 10 (extreme concern/extreme stress).

Abbreviations: M, mean; SD, standard deviation.

^aThe "Amount of research shutdown" item was coded on a 6-point scale as follows: 1 = 0% of research shutdown; 2 = up to 20% of research shutdown; 3 = up to 40% of research shutdown; 4 = up to 60% of research shutdown; 5 = up to 80% of research shut down; 6 = up to 100% of research shutdown.

TABLE 4 Number of comments recorded and themes and illustrative (shortened, paraphrased)

Statements identified by open-ended questions.

Please share your 1–3 most effective strategies for dealing with COVID-19 in terms of your eating disorders research. (222 comments)

1. Employ technology-based solutions (96/222, 42.3%)

Attending online conferences or webinar programs; creating a platform for virtual convening to share information or provide support; using crowd-sourcing for participant recruitment; switching to remote design implementation.

2. Goal adjustments for one's work overall or for specific projects (81/222, 35.5%)

Prioritizing tasks that can be done remotely; adjusting study goals; writing more review papers; focusing on analysis of data already collected by the respondent or of data created by others; brainstorming ideas for future projects.

3. Practicing acceptance of disruption (33/222, 14.9%)

Focusing on what is feasible rather than dwelling on what is impossible; accepting the inevitability of reduced productivity; letting go of self-imposed expectations.

4. Building the respondents' or their team's capacity (15/222, 6.8%)

Learning new skills related to use of online technologies; reassigning staff; inviting colleagues to the team who cannot continue their own research but have time to work on data analysis and manuscript preparation.

Please share your 1–3 most effective strategies for transitioning your eating disorders research to online settings. (Respondents were instructed to skip the question if they had not made such a transition.) (142 comments)

1. Employ technology-based solutions (80/142, 56.3%)

Using apps (e.g., Venmo to pay participants, facetime for collecting weight data); holding meetings via zoom or Webex; conducting survey research via Qualtrics.

2. Preparing key individuals for task shifting and using technology tools (15/142, 10.6%)

Using screen sharing to teach participants how to collect their own data at home; forming study groups for the research team to learn use of technology tools; shifting data collection task from research team to others (e.g., teachers).

3. Employing effective and frequent communication (13/142, 9.2%)

Recognizing the need for clear communication because your audience may experience information overload; holding frequent staff meetings to make sure everyone feels informed and connected; keeping in touch with participants to reduce study drop-outs.

Please describe 1–3 changes you expect to make in your research practices as a result of COVID-19.

(respondents were instructed to skip the question if they did not anticipate making changes or had checked "it's too soon to tell"). (94 comments)

1. Moving their research to (or maintaining it on) to online platforms or preparing accordingly (60/94, 64%)

Exploring online interventions; collecting all data online; training research staff in online procedures.

2. Altering ongoing studies or changing research direction altogether (20/94, 21%)

Increasing focus on qualitative research; reducing the emphasis on imaging studies; contemplating a career change.

Please describe 1–3 changes the eating disorders research community should make to support research during and after COVID-19. (151 comments)

1. Encouraging research collaboration (49/151, 32.5%)

Jointly recruiting participants; employing open science practices (e.g., sharing methods); sharing advice about best practices.

2. Undertaking advocacy efforts (29/151, 19.2%)

Raising awareness that eating disorders receive insufficient resources for research and interventions; advocating for research funding of COVID-19 related work; advocating funds to support students.

3. Setting and acting upon positive social norms (26/151, 17.2%)

Encouraging and supporting others, especially early-career scholars; being aware of challenges colleagues may be encountering; practicing kindness; giving others a break.

4. Utilizing technology (19/151, 12.5%)

Holding conferences online; conducting webinars for professional development; increasing online research.

Is there a question about COVID-19's impact on your eating disorders research that we should have asked but didn't? (42 comments)

1. We should have asked about high-risk researchers (18/42, 42.9%)

Distractions due to childcare responsibilities; potential differential impact of family responsibilities as a career detriment for women; missing out on learning opportunities via informal encounters that typically happen in the workplace; disruptions threatening students' opportunities for graduate school stipends; disruptions diminishing the educational opportunities for students currently on internship; worries about a bad job market for graduates.

2.3 | Qualitative data of respondents' perspectives on COVID-19's impact on their research, career and the field

Table 4 displays findings for the open-ended questions: the total number of comments entered for each question, the key themes reflected in those comments, and examples for each of the themes. The examples capture statements in abbreviated and paraphrased form, consistent with our consent statement indicating that we would summarize responses rather than provide specific individual examples.

2.3.1 | Effective strategies for dealing with COVID-19-related research challenges

The item prompting respondents to describe "1-3 effective strategies for dealing with COVID-19 in terms of your eating disorders research," yielded 222 entries. Four themes captured most of the comments: employing technology solutions (e.g., switching clinical trial interventions to telehealth formats) (42.3% of responses); adjusting or reprioritizing goals for one's work (e.g., writing more review papers, focusing on analyzing archival data, etc.) (35.5%); practicing acceptance of the current situation (e.g., focusing on what is feasible) (14.9%); and engaging in capacity building for self or the team to cope with the COVID-19-related research challenges (e.g., learning new skills) (6.8%).

2.3.2 | Effective strategies for transitioning to online settings

Three themes captured most of the 142 responses to "effective strategies for transitioning your eating disorders research to online settings". By far, the most comments were about employing technology solutions (e.g., using apps, for example, Venmo for paying participants) (56.3% of responses). A far smaller number of comments fit the themes of preparing key individuals for task shifting (e.g., forming study groups for research team to learn technology tools) (10.6%); and of employing effective and frequent communication (e.g., keeping in touch with research participants to reduce study drop-out) (9.2%).

2.3.3 | Changes respondents anticipated making in their research practices, post-COVID-19

Two themes were identified that captured most of the 94 comments for "describe 1-3 changes you expect to make in your research practices." By far, the most common changes involved moving their research to (or maintaining it on) online platforms or preparing their work accordingly (e.g., exploring online interventions) (64% of responses). The second theme was modifying ongoing studies or changing future research directions (e.g., focusing on qualitative work) (21%).

2.3.4 | Changes the eating disorders community should make to support research during and after COVID-19

Four themes captured most of the 151 comments for "describe 1-3 changes the eating disorders community should make to support research during and after COVID-19." Numerous comments focused on encouraging research collaboration (e.g., jointly recruiting participants) (32.5% of responses). A second theme was encouraging advocacy efforts for the resource needs of research and clinical work in the field (e.g., raising awareness of insufficient funds) (19.2%). A subset of comments reflected the theme of encouraging positive social norm setting and collegiality (e.g., encouraging and supporting others, especially early career scholars) (17.2%); the fourth theme was utilizing technology (e.g., holding conferences online) (12.5%).

2.3.5 | Institutional policy changes regarding performance evaluation of researchers

Of the 55 answers to the request to "describe your institution's policy changes about performance evaluation of researchers," by far, the most commonly reported policy change was an extension of performance evaluation periods 78.2% (e.g., a voluntary delay by 1 year). (Because of the clear, single policy change mentioned in this category, this question is not included in Table 4).

2.3.6 | Question the survey should have asked

The 42 comments made in response to the question "Is there a question about COVID-19's impact on your eating disorders research that we should have asked but didn't?" reflected a diverse set of issues. We identified only one theme that met our criterion of requiring at least 10 comments/theme. Respondents felt that we should have asked questions about the particular and marked challenges faced by researchers with disadvantages such as still being in graduate school (with the respondent noting financial pressures) or being early in one's career (where performance expectations may be especially acute for securing future employment) or having child-care responsibilities that conflicted with work duties during the stay-at-home order (e.g., daycare closures) (42.9% of responses).

3 | DISCUSSION

This survey sought to describe COVID-19-related impacts on eating disorders research as reported by researchers in the field, using quantitative and qualitative measures. Respondents to our survey were predominantly female, likely reflecting the gender distribution among members of the groups targeted by our invitation. For example, anecdotally, we estimate that a large majority of SIG members are women, about 65% of EDRS members are female, and 60% of the members of

the largest of the three journal editorial boards (*IJED*) are female. We found four major findings. One, for most respondents, the pandemic has disrupted at least part of their eating disorders research, yet approximately half of our respondents reported that they had been able to transition some or all of their studies to online settings. Two, the research activities that were rated as most challenging or concerning because of COVID-19 included recruitment, data collection, and securing future funding, and our sample reported high level of stress experienced since onset of the pandemic. Three, with two notable exceptions, reported concerns did not vary significantly between participants in permanent (presumably secure) jobs versus those in non-permanent positions. However, higher stress and greater concerns about impacts of COVID-19 on respondents' future career were reported among people holding non-permanent positions as compared with researchers in permanent positions. Moreover, women reported greater concerns about their future career than men; men reported greater concern about staffing than women. In addition, four, we received an impressively large number of comments in response to open-ended questions. Across several questions, employing technology was named as an effective strategy.

That COVID-19 disrupted eating disorders research is, of course, not an unexpected finding; however, the extent of studies that needed to be halted is noteworthy. An estimated 20–40% of respondents' eating disorders projects reportedly had to be stopped. Our survey did not ask why projects had to be stopped. As a handful of respondents noted in open-ended responses, research methods requiring in-person assessments and/or highly specialized equipment or technical expertise (e.g., for neuroimaging) cannot be transitioned to remote implementation. In terms of other possible reasons, we speculate that it is also possible that some researchers may have suspended studies out of concern that their results would be confounded to the point of being uninterpretable due to COVID-19-related impacts on research participants (e.g., increased levels of disordered eating, anxiety, or depression). Another possibility is that some colleagues may not have had the staff resources to quickly convert their research to remote administration. Although an impressive number of respondents (48.5–52.3%—see Table 1) reported *task-focused* strategies for dealing with COVID-19-related disruptions that focused on online settings, for certain projects, going online may have been difficult if they involved participants with inadequate online access or devices, such as people living in rural or disadvantaged areas, and/or families who must provide computer access for parents working online and their children completing their coursework online. Because of these differences and disparities, the disruptive impacts of COVID-19 likely will be felt unevenly across research areas in our field.

About half of respondents in both tenured/permanent groups and non-tenure/temporary positions reported transitioning their lab-based studies to online settings. The longer-term impact on recruitment or on completeness and quality of data from studies that needed to be converted “mid-stream” is yet unknown. The high levels of concern reported about data collection and participant recruitment likely reflect both the realization of severe constraints

for those engaged in methods that require in-person implementation, and the challenges in maintaining high rigor when research participants are left on their own for completing assessments. Funding agencies have issued policies in support of design modifications (European Commission, 2020) and scientific journals have begun to describe best practices for design modifications (McDermott & Newman, 2020, March 25).

Scientific productivity may be adversely impacted by delays in recruitment and data collection and by diminution of methodological rigor (e.g., due to attrition or needing to replace objective measures with subjective reports). The high levels of concern expressed about securing future funding may reflect, in part, respondents' worries about how a decrease in scientific productivity or rigor may impact the merit scores of their grant applications. Additionally, as reflected in some comments, concern was expressed that for a time, funders will prioritize COVID-19-related research over other topics, depleting already scarce funds and further increasing competition for grant funding.

Overall, our sample reported having experienced a high degree of stress since the outbreak of the coronavirus. As by Fernández-Aranda and colleagues (Fernandez-Aranda et al., 2020) and by Touyz and colleagues (Touyz, Lacey, & Hay, 2020), pandemics give rise to high levels of stress both in the general population and in various high-risk groups (Brooks, Dunn, Amlot, Greenberg, & Rubin, 2018; Torales, O'Higgins, Castaldelli-Maia, & Ventriglio, 2020). We did not measure at-risk criteria such as whether respondents themselves had become infected with or were directly exposed to individuals infected with coronavirus. Anecdotally, we know that some researchers in the field oversee clinical service departments (e.g., inpatient units), work in hospital settings, or continue to treat patients. Our survey's cross-sectional design and lack of a comparison group comprised of non-researchers preclude attributing the reported stress-levels to strains caused by research disruptions. Still, considering the response range of our stress-item from 0 to 10, with 10 being “the highest level of stress imaginable,” our mean of 6.88 and median of 7 indicates that many respondents experienced a high degree of stress.

As hypothesized, however, the burden of stress was not equal across all participants. Participants holding temporary positions (including researchers on time-limited contracts with or without an opportunity to convert to lifetime contracts; and post-docs or graduate students) reported markedly higher levels of stress than respondents holding more permanent appointments (e.g., tenure). Individuals with temporary appointments also reported disproportionately high levels of concern about their career future. Women were more likely to hold temporary appointments than men; unfortunately, the sample size of men in temporary positions was very small ($n = 12$), precluding detailed exploration of the intersection of gender and position type. We note that in our unplanned analyses, overall, women expressed significantly higher career concerns than men. Our short survey did not collect data about factors that would help fully explain these findings. For example, we did not ask respondents with lifetime appointments whether they had already reached their highest rank and may therefore be less concerned about promotion. Qualitative data about

researchers facing disadvantages noted several challenges that would be expected to contribute to high levels of stress and career concerns, including limited financial resources, time limits for establishing scholarly productivity, and childcare responsibilities.

Resoundingly, harnessing technology was noted as key to continuing research during the pandemic and succeeding in research in a post-COVID-19 world. Many respondents indicated that they expected that online methods (e.g., telehealth implementation of interventions, online data collection) represent the future *modus operandi* for their research. As has been noted for other sectors (e.g., higher education), remote work, and working online likely will characterize a greater part of work because it can be a convenient and resource-saving means of performing one's duties. Participants, by necessity, currently are getting used to participating in online settings and some may, in fact, prefer to continue this form of engagement to in-person activities in some areas of research (Linardon, Shatte, Tepper, & Fuller-Tyszkiewicz, 2020). The literature on "i-mental health" (i.e., interventions offered online) provides excellent information on how assessments or treatments can be performed in an online setting. Recent papers offer best practices tips for clinicians who need to pivot from in-person to telehealth delivery of Cognitive-Behavior Therapy (Waller et al., 2020) and discuss legal, ethical and accreditation issues regarding use of technology in treatment and research (Taylor, Graham, & Fitzsimmons-Craft, in press). It would be useful for the field to develop comprehensive, best practices recommendations for how to implement eating disorders research online, including in areas that do not readily lend themselves to online implementation (and may require some form of "blended" implementation). Although the long-term impact of the expected massive shift of research from in-person to on-line implementation will remain unknown for months/years to come, being purposeful and empirical in our application and evaluation of on-line research is likely to yield the most benefit to our science.

Beyond reporting *task-focused*, on-line strategies for dealing with COVID-19-related disruptions, several other respondents suggested strategies that were *other-focused*, such as reassigning tasks (e.g., enlisting teachers for data collection), employing effective communication strategies (e.g., maintaining connection with research participants), or pursuing collaborations (e.g., jointly recruiting participants across research groups). For example, suggestions included that major professional organizations could be re-organized into "federations" to achieve greater synergies and maintain connections with others in their field. Another suggestion was to co-convene the field's major conferences to maximize efficiency in regards to travel time and venue costs. Although these strategies are likely to be most needed during crises like COVID-19, these are organizational shifts that will likely enhance research practices and strengthen research networks in our field beyond COVID-19.

Finally, a remarkable number of qualitative comments were *self-focused*, such as adjusting one's goals or reprioritizing tasks (e.g., focusing on analyzing data or grant writing), practicing acceptance (e.g., "this too shall pass", acknowledging the inevitability of setbacks but committing to moving forward with creative solutions), or

pursuing opportunities for "brushing up on the literature" and skill building. Some of this self-help career advice is echoed in a recent editorial on how to stay "productive while teleworking" (Brown, Montenegro, Yeo, & Brody, 2020; Schiffman, 2020, April 16). These coping efforts may mitigate some of the adverse impacts of current research disruptions (e.g., maintaining a positive outlook and carrying on with tasks that can still be done) and may increase the likelihood future success (e.g., learning new skills or grant writing).

We echo a caution, however, expressed in some comments; while nothing is gained by dwelling on what cannot be done, there is an undeniable reality that for some colleagues, COVID-19 has thwarted opportunities that cannot be easily replaced, or created hurdles that cannot be overcome, no matter the actors' good intentions or positive self-talk. Both as individuals and as a community of scholars, we need to set realistic performance expectations for our colleagues and for ourselves. In this regard, we note that some institutions reportedly have already modified performance evaluation policies, most typically, by extending the time based upon which productivity is measured (e.g., extending the tenure clock by 1 year for all faculty). Nonetheless, it is striking that over two-thirds of respondents noted that their institution had not yet made any changes to institutional performance evaluations. This is worrisome, particularly given that the impacts of COVID-19 may not be distributed evenly, and that those with fewer financial resources, with obligations such as caring for children, or with less established careers, may find it more difficult to implement their research projects as planned before the pandemic struck. Women in our survey were more likely to still be in an untenured position. Moreover, an extensive literature attests to the continuing unequal burdens women face in terms of childcare responsibilities (500 Women Scientists, 2020, May 7; Kamp Dush, Yavorsky, & Schoppe-Sullivan, 2018). Much like the move to on-line assessments, the COVID-19-related research disruptions will likely differentially affect researchers across career stage and existing areas of disadvantage and create larger disparities in our scientific workforce. Purposeful, directed interventions that scale performance evaluations to COVID-19 disruptions and individual circumstances are needed to mitigate these effects, as much as possible.

Before ending, we should note limitations of our informal study. Our brief survey was limited by an uncertain response rate, inclusion of a sample of convenience, and a lack of detail regarding important demographic (e.g., race/ethnicity; family status; specific appointment rank) and contextual factors (e.g., whether participants' research required complex equipment). Our sample included far fewer men than women, and men were especially underrepresented among those in temporary positions, limiting our ability to test for subgroup differences and generalize findings. As noted by the respondents (see Table 4), we also did not include questions that could increase understanding of the ways in which other responsibilities (e.g., childcare, home schooling, moving teaching on-line) impacted our respondents' ability to conduct their research during COVID-19, or the ways in which researcher disadvantage (e.g., lower socioeconomic status) may compound stress and resource inequalities. These omissions result in missing information about the experiences of individuals who may be

most at-risk for experiencing COVID-19 research disruptions. We are aware that others have adopted and revised our survey, with permission, for use with their own research groups (e.g., the Psychiatric Genomics Consortium; Bulik, Personal Communication, May 6, 2020) and have included additional questions tapping some of these important topics (e.g., difficulties working from home, including difficulties arising from child care responsibilities). We welcome inquiries from others to use/revise the survey and hope that our colleagues will conduct more rigorous and extensive surveys to document the impact of COVID-19 on our fellow eating disorder researchers and the field at large.

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DATA AVAILABILITY STATEMENT

Data will be shared upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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