

# HARBINGERS-2: ECRS AND BURNOUT

University of Tennessee Knoxville/CIBER Research

Early career  
researchers:  
scholarly  
communication  
trends, work life  
and impact of  
pandemic.  
December, 2021.  
Funded by Alfred P.  
Sloan Foundation.

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# Early career researchers and ‘burnout’

## Introduction

*Nature* published in Spring 2021 a news item entitled *Pandemic burnout is rampant in academia*<sup>1</sup>, which is based on a survey appearing in *The Chronicle of Higher Education* and conducted last October 2020 (roughly the same date that Harbingers-2 began), and, no doubt, meant to attract widespread attention, if not, notoriety. It found that remote working, research delays and childcare obligations were increasingly taking their toll on scientists, causing stress and anxiety (‘burnout’ in their terms) and it was women who suffered the most. It was a corporate questionnaire survey; it covered the US only; and, at best, it might really reflect the pandemic hysteria and rhetoric built-up around the US election rather than the state of affairs now. However, the article made us think it was worth looking for evidence of burnout among our own early career researchers, who, are after all, the most vulnerable of all academic communities. With no tenure and on short-term contracts, yet still with the full gamut of housing and caring responsibilities (many of our ECRs are in their thirties with families) and with increasing workloads because of the greater demands that remote teaching is making<sup>2</sup>, they might, arguably, be the first to experience burnout. Evidence, perhaps, that ECRs will be the lost generation with all that means for the future of science.

First of all, we need to establish what this emotive, headline grabbing term ‘burnout’ really means. Definitions tend to agree it means ‘ruin one’s health or become completely exhausted through overwork.’ Reports on the topic suggest that the problems of working from home because you cannot separate home and work leads also to overwork, and consequent burnout. Some countries, such as France and Malaysia use the English term burnout, whereas others use their national equivalent, for instance, in Russia it is ‘vygoraniye’, ‘estar quemados’ in Spain and ‘wypalony’ in Poland.

## Methodological note

Data for the paper was collected, by depth interviews, with 177 ECRs from 8 countries on the impact of the pandemic on their work lives and scholarly communication activities. Reported here is a considered evaluation of interview on which was held in January – February 2021 and a more cursory analysis (data are still being processed) held September/October 2021. The questions were largely open-ended and in the case of interview 1 the term burnout was not actually used because it was felt it would have been too direct and leading (as questionnaires tend to be), but they were prompted on the

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<sup>1</sup> <https://www.nature.com/articles/d41586-021-00663-2>

<sup>2</sup>

[https://advance.sagepub.com/articles/preprint/Insights into the impact of the pandemic on early career researchers the case of remote teaching/16870627/1](https://advance.sagepub.com/articles/preprint/Insights%20into%20the%20impact%20of%20the%20pandemic%20on%20early%20career%20researchers%20the%20case%20of%20remote%20teaching/16870627/1)

problems and difficulties they were experiencing. As a result, they did volunteer information in respect to about half a dozen questions about work pressures and problems brought on by the pandemic (such as questions about workloads, working from home and security – see for the full list of questions<sup>3</sup>) and they provide us with evidence which helps to establish whether burnout is a factor or not. Data was gathered in two ways: a) from a hypothesis analysis of the data. In practical terms this meant that the interview data, including quotes from the transcripts, were transferred to a spreadsheet, coded and tested against the list<sup>4</sup> of more than 100 hypotheses that had been assembled and further developed inductively; the codes confirmed, partly confirmed and not confirmed where used; b) national interviewers were asked to thematically review their interview transcripts for evidence of burn out, especially quotes.

For interview 2, though, for which we only provide an initial analysis here, we introduced a more direct line of questioning on burnout in order to determine whether it would make a difference to the response. The question, still asked in an indirect manner, was “It is said that remote working and/or care obligations are taking toll, causing ‘burnout’ (stress and anxiety); is it so in their case?” Again, national interviewers were asked to overview their interview transcripts to provide the early evidence coming through.

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## Hypotheses analysis (all countries)

These 7 hypotheses have been selected to illustrate which of those pandemic-incurred circumstances that are potentially conducive to burnout - or to its very opposite - did indeed turn out to reflect ECRs’ experiences.

- 1. The pandemic has seen ECRs passed over for jobs.** Just 12% ECRs made a response relevant to the hypothesis, so the data is quite thin or simply not there to support the hypothesis. Thirteen made comments that would seem to reject the thesis, 3 could be classified as partly confirming it and the remainder (6) said things that would confirm it. Thus, we can say that there is little evidence to really say whether they are being passed over, something which might contribute to burnout. It could be is that they just would not have known.
- 2. The pandemic has made it difficult for ECRs to hold on to their job.** This is a related hypothesis about job security, but one where the data was much more plentiful with over half of ECRs (53%) expressing a comment on the topic. The large majority of comments rejected the hypothesis, meaning that 40% of all ECRs rejected

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<sup>3</sup> [http://ciber-research.com/harbingers-2/20201202-H2-Interview\\_schedule-1.pdf](http://ciber-research.com/harbingers-2/20201202-H2-Interview_schedule-1.pdf)

<sup>4</sup> For the list of hypotheses see <http://ciber-research.com/download/20211005-H2-hypolist.pdf>

it. Spain was the only exception with the majority of ECRs believing jobs were in danger. This can be put down to the fact that the job market in Spain is notoriously competitive and difficult, and has been for some time.

3. **ECRs' career prospects have already suffered because of the pandemic-incurred hardships.** Nearly a third (31%) of ECRs volunteered a comment on this topic and they were split completely down the middle as to whether this was the case or not.
4. **The pandemic has led to re-organisation in work place/role, resulting in ECRs' becoming overworked.** Clearly being overworked is a key element of burnout. This proved an extremely popular hypothesis with 97% of ECRs volunteering relevant comments. Again, ECRs were polarised with 49% confirming the thesis and 46% believing the opposite and just 1% partly confirming. Country differences partly explained the distribution with, for instance with 70% of Spanish ECRs believing it the case and 75% of Chinese ECRs rejecting the supposition.
5. **The pandemic has led to re-organisation in work place/role, resulting in ECRs' becoming undervalued.** Over half (53%) of all ECRs said something relevant to the hypothesis the vast majority rejected it presumably thinking they might even become more valued. Thus, 44% of all ECRs felt that, with just 1% thinking not. The only country where there was a sizeable support for the undervalued argument was France with over a third (35%) thinking that this might to be the case. This fits with their general pessimism we have seen elsewhere.
6. **ECRs had difficulty keeping up with work during the pandemic, and in particular during lockdowns, especially ECRs who had caring duties.**

Just under two-thirds (63%) of ECRs made a response in connection with this hypothesis and the large majority felt this was the case, meaning 42% of all our ECRs fully concurred and just 19% did not. The only exception was Poland where nearly two thirds (64%) thought they had not encountered problems of keeping up with work.

7. **ECRs' levels of self-perceived productivity have dropped during the pandemic.** Lower levels of attribution were found here with just 45% recorded overall and a very mixed response was obtained with China and France confirming that productivity had dropped; Spain, UK and US rejecting that it had and Malaysia, Poland and Russia being split on it.

In all then, out of the largely negative outcomes of the pandemic portrayed in the 7 hypotheses, the first (passed over for a job) obtained too little evidence to establish; the second (difficult to hold on to a job) was largely rejected; for the third (career perspectives suffer) and fourth (overworked) opinions were split; the fifth (becoming

undervalued) was largely rejected; the sixth was largely accepted; finally, for number 7 (drop in productivity) views were split. So, in only one case was the negative hypotheses accepted, therefore the tentative conclusion is that the situation ECRs find themselves in is certainly not dire and burnout is not being widely experienced or feared.

We also used hypotheses that aim to establish which of those pandemic-incurred circumstances that are potentially conducive to burnout - or to its very opposite - did indeed turn out to reflect ECRs' experiences, such as 'The pandemic has opened up new career opportunities for ECRs'. These together with a more expansive list of the hypotheses given above will form a paper we are currently working on.

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## **Qualitative Interview data (individual countries)**

This section of the report drills down into the country-specific details and follow-up some of the findings of the hypothesis analysis.

### **China**

Throughout the interviews, although burnout was not mentioned by name, many ECRs mentioned their increased stress, struggle and exhaustion and blamed the pandemic for this. Three main factors contributed to this. First, – and most importantly, the pandemic has made it more difficult to meet their assessment criteria and hence, the hypothesis finding that they were concerned that their productivity has suffered. Their research performance is assessed by traditional bibliometrics (papers published, citations obtained) and they are more stressed about it because they have relatively “shorter” period of time to meet the requirements. The pandemic and the lockdown suspended their research more or less, so they have a shorter time to meet their goals. Usually, a postdoc needs to pass the evaluation in three years for extending the contract for another three years. That is to say, after six years in total, if a postdoc cannot meet the requirement or pass the peer review for promoting, he/she will be “kicked out” by the university. As reported by the Nature article, the passing rate can be very low at some universities. Second, some ECRs said they have to do additional administrative works which distracted them from research, and this worried them. For example, ECRs need to give lectures to industrial people, attend non-academic meetings, and apply for reimbursement from the university.

Thirdly, some ECRs mentioned that applying for research grants is extremely difficult for them, especially when they need to win a national funding to obtain a long-term contract. This is because the number of ECRs is growing every year, because many postgraduates apply for PhDs and young talent who received overseas PHDs came back to China to look for jobs. Nevertheless, we have seen from the hypothesis analysis that because Chinese

researchers are said not to like complaining they actually reject the supposition that they were overworked as a consequence of the pandemic.

Interview 2 data not yet available.

## **France**

During the interviews and especially towards the very end of the interview all ECRs mentioned things connected to burnout, but not the term itself. While no one actually said they had experienced burnout, many of them had real concerns and mentioned many some of the symptoms - how it affected mood, mental health, isolation, tiredness, anxiety, etc. This was related to four main interrelated causes. The first one is isolation. ECRs found themselves stuck in tiny flats. Some of them had to work on the table of the kitchen, where they used to eat their meals, sometimes without speaking to any person a day. The second one is the lack of social interaction, the fact that at the end of a long day of work, they could not switch to a more social activity. Even they went to virtual “apéros” (aperitifs) for instance, they clearly mentioned the fact that it was not satisfactory. The third cause was that even they had material conditions to do their work, they were not always able to work or work with the same efficiency and they felt this as a failure. The fourth cause, was uncertainty on when pandemic would stop, and the amount of impact on their own work.

At the end of the interview, when ECRs were asked whether they wanted to add anything else all ECRs mentioned in some form or another that, even for their colleagues, that the whole issue of burnout (but not employing that word) was either not considered properly or underestimated because it is thought that what they do is considered as just intellectual work and not related to the physical environment or to social conditions (reality in other words), so how could they be suffering. It is thought that this is the real elephant in the room. Plainly burnout is being experienced by ECRs in France and this is backed up in part by the hypotheses analysis, which showed that they felt unproductive.

Interview 2 saw no change at all, still high levels of burnout.

## **Malaysia**

Only one ECR specifically mentioned ‘burnout’: *“I think in terms of my own work it is quite OK. But I feel burnt out a bit because I’m at home and I need to take care of all my kids (5) at home, their online schooling.”* However, for the rest, the words consistently mentioned were stressful, struggling, challenging, exhausted, but what saved them was their resilience and resourcefulness and the fact that they have developed coping mechanisms as the following quote illustrates:

*“To be honest I have breakdowns, I believe those who teach face this, I have to conduct an online laboratory, this is impossible. How can you conduct lab online? you cannot teach students how to use a micropipette, it’s impossible [online]. So, I had to create my own means, I bought .....and I use my own money to get the materials to teach from home...spend more time for preparation. They are though clearly overworked; they are used to this.”*

## **Poland**

During the first round of interview in Winter 2020 two ECRs had endured the pandemic very badly and during the interviews they were clearly very tired, apathetic, and without vitality. One was in prolonged quarantine, had undergone COVID himself and had sick people in his family. The other one was extremely unwell when working remotely from home, had a bed and a computer in the same room, which after a while had a very bad effect on him. But these are probably temporary and passing problems.

In summer and early autumn in Poland all ECRs appeared to be taking a break from COVID and catch up on research work.

During the second round of interviews in September 2021 No one said “I feel burnout”. The interviews were conducted before the start of classes (October) at Polish universities. At the end of November, the fourth wave of the pandemic is sweeping through Poland, with more and more groups of students moving to remote classes. However, scientists in Poland have not been as severely professionally affected by the pandemic as other professions and industries. Some small signs of burnout can be seen here but on the whole as the hypothesis analysis showed that most Poles felt they managed to keep abreast of their research work and mastered remote teaching to perfection.

## **Russia**

During the 1st round of interviews, there was not much evidence of burnout being experienced, with just two ECRs said they experienced it. Two women mentioned anxiety and depression in the early stages of the pandemic due to the uncertainty of the situation, an apathy due to working at home and social isolation. The first, a physicist, obviously had a bad time, mentioning depression:

*“I would say I fell into a terrible depression; it was insanely hard for me to work [remotely] in general. Until I begged to be given access to the institute and to at least leave the house from my room to work, and at least spend time there so that there were not four walls that pressed on me. Then it became a little easier, but for me it had a negative effect. That is, my performance simply fell below the plinth.”*

The second women, a chemist, who suffered from anxiety, explains:

*“Morally, this situation was very pressing. So, it seems to me that now we are already very much used to it and do all these things automatically. It’s a full day now, **so life goes on**”*

Both now (by Interview 2) report that their negative feelings have passed and things have returned to as normal as they can be.

A third (a male chemist) was fine in interview 1 but now says he is feeling worse due to: a) work restrictions and its aftermaths, such as home working and not being able to work efficiently; b) his upcoming defense of his thesis:

*“The laboratory barely scored its performance indicators, articles, speeches at conferences, because some of the conferences were closed. The articles we normally could not write or we were able to write somehow, but I feel a shame for these articles. Part of the research was lost. **And the most important thing happened — emotional burnout** [...] I should defend my thesis, and every day is stressful for me: there are documentation and different papers. I’m a little mentally squeezed out. And so, I think, I hope, that with the defence of the dissertation, it might let go.”*

Generally speaking, then this was the main difference between interviews 1 and 2.

## **Spain**

Spanish ECRs did not mention any specific burnout symptoms. They did report though, feel more insecure and overworked, but they felt they could handle it, saying that they are used to living in a precarious situation, which for many had done so for a good number of years. They had problems finishing experimental work, but they used their ‘lost’ time for finishing papers and sending them to journals for publication. That helped a lot. Some of them did feel isolated, but others were happy with working from home and not losing time to commuting. In general, Spanish ECRs they are positive people that try to take advantage of the new situation, whatever that situation is. Not surprisingly the hypothesis analysis showed that they did not feel their productivity had fallen, but on the other hand that they did feel overworked. There was one ECR, though, who said they were having problems concentrating at work because they were very worried and felt lonely in the city (Madrid) as her family live a long way away and she could not visit them during lockdown: *“My capacity of work decreased because I have difficulties for concentrating as I was and I am worried about the pandemic effects”* And another ECR expressed that the duration of pandemic was affecting her work: *“At the beginning was not too bad, but at this point in time [March] it is starting to affect my productivity. The number of meetings and workload have increased, and restrictions are still in place; making this situation very challenging.”* Signs of burnout here, but Spanish ECRs have been seasoned by years of difficult times. Strength through adversity comes to mind.

In the second round, there were fewer signs of burnout, with Spanish ECRs proving to be more optimistic.

## UK

Only one out of the 24 ECRs interviewed showed signs of serious concern about the impact of the pandemic. She suggested that we should be more concerned about the impact on mental health than about child care problems. She did not apply this to herself, but reading between the lines she was probably thinking of her own situation. The word "resilience" is a good expression of ECRs' states of mind at the time. They set out the problems that had made them less productive, but felt that they had overcome them and the hypothesis analysis showed that. Thus, almost all of them did not feel more insecure when asked that question.

However, compared with the Harbingere-1 group, there were more signs of doubts about an academic career, but whether this was due to the impact of the pandemic or was it more because these were ECRs who were always been particularly concerned about doing research rather than research and teaching is a moot point. We probably lean towards the later explanation.

The ones who were having a particularly tough time (but not burnout) were 2 assistant professors (lecturers) who were finding the extra workload a strain but even the most strained was happy that they had reached the majority of his targets already. Two had childcare problems and both were men.

During the second interview ECRs were specifically asked about their mental health and the word "burnout" was used. This caused many of the cohort to reflect on their own mental health but usually retrospectively. It was not a matter of change from the first interview but rather the question enabled them to reflect on past pressures. Few applied the word to their own condition and most had high morale. This quote from an environmental scientist is typical of the general attitude: "*No but neither has a good work life balance materialised. Not burnt but frazzled at the edges.*" Another mentioned the problems caused by the "burnout and chaos" of others. Burnout among others was mentioned by several. Some associated burnout with the time spent at home because labs or offices were shut to them. One social scientist reflected: "*There was a few months in the doldrums but I then snapped out of it. Setting boundaries and keeping them is easier to do in the office.*" Two who had changed from planning an academic career associated the burnout question with the poor work/life balanced they had experienced

## US

For the most part, interviews did not provide any sense of burnout occurring. However, of the 22 US participants, there were two (one male and one female) who seemed to be actually fatigued/stressed during their (distant) interviews. The male (a doctoral

student) had experienced mental health issues, but his research group and university were also very supportive, for which he expressed much gratitude. The female was a relatively new assistant professor and a high achiever who was struggling with multiple changes and a concern about lack of research productivity that could affect her funding. Both ECRs expressed issues arising from being isolated from other people.

As might be expected, there were those who felt overworked due to changes introduced as a result of the pandemic (e.g., moving to online teaching, changes in the lab, blurring of personal/professional time, etc.). But during the interviews, most did not refer to ongoing stress. Even a relatively new assistant professor who had 'long Covid' stated "I don't feel undervalued, I feel very appreciated" by my department. Small signs of stress, if not burnout and the hypothesis analysis reported no drop in productivity.

Interestingly, when asked the direct question about burnout, two-thirds of the respondents said they did experience some sort of 'burnout' or depression (or both) at some time during the pandemic. But some of these ECRs were not sure if that was directly related to remote working or care obligations or other influencing factors.

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## **Tentative conclusions**

From the first interview, there was little evidence of a generation of researchers having been burnout, seriously damaged or 'lost' to science. That is with the important exception of France. While the seven other countries between them only reported half a dozen or so ECRs experiencing burnout, in the case of France, most, if not all, ECRs clearly experienced it and this was a much down to controversial government reforms of the sector as the pandemic. The latter was the straw that broke the camel's back.

What is thought to have protected most ECRs from experiencing burnout is the fact that they are highly motivated and resilient and employ coping mechanisms developed over the years. The supposedly weak (ECRs), in fact, are battle-hardened and being relatively young they are more able to see the opportunities arising from the situation. Perhaps another explanation for the relatively low levels of burnout reported is that things have got better some 9 -12 months into the pandemic, when we were interviewing, because some participants mentioned something to the effect that "if you had interviewed me last spring, some of my responses would have been very different" (i.e., more negative). Possibly, too, there was a reluctance to admit to burnout because, as one observer mentioned, 'Burnout is for the medical profession facing the pandemic...' In other words, it should be reserved for front line medical staff.

When it came to the second interview, where we asked more directly about burnout, ECRs still fought shy of the term, but significantly more US ECRs reported burnout and it is thought this is down to the reframed question, which gave them a "launch pad" to share

the kinds of sentiments related to burnout, anxiety, stress, etc. Thus, around 3 ECRs from the first interview mentioned enough throughout their first interviews that could have enabled speculation they were nearing or in 'burnout'. But by asking the burnout question in the second interview, it removed speculation and more came forward. In the UK, they were more forthcoming about talking about the topic, but still did not claim to having been burnout.

Finally, as to whether women suffer more from burnout than men, we do not have sufficient robust evidence at the moment to answer this, but early data does not point to this. Thus, women proved more positive about working from home than men and men felt more insecure than women as a result of the pandemic.