Supplementary materials

Table A1
Participants' characteristics

Characteristics	Number n (%)
Total	543
Research experience	
< 3 years	130 (23.9)
3-5 years	115 (21.1)
6-9 years	81 (14.9)
10-15 years	88 (16.2)
> 15 years	129 (23.7)
Duties besides research	
Exams	149 (27.4)
Teaching	231 (42.5)
Clinical	268 (49.3)
Logistics	215 (39.5)
Other	41 (7.5)
None	99 (18.2)
Position	
MSc student	13 (2.4)
PhD student	125 (23.0)
Post-Doc	48 (8.8)
In training†	62 (11.4)
Lecturer	15 (2.8)
Professor*	101 (18.5)
Medical Physicist	93 (17.1)
Biologist	15 (2.8)
RTT	18 (3.3)
Oncologist	116 (21.3)
Other	57 (10.5)

* Assistant professor + Associate professor +
Full professor, † MD or Medical Physicist in training + MD resident.

Supplementary Table A2
Country of work of the participants.

Country of work	Number of respondents	Percentage
Italy	89	16.36%
Netherlands	89	16.36%
France	50	9.19%
United Kingdom	48	8.82%
Poland	39	7.17%
Switzerland	31	5.70%
Denmark	24	4.41%
United States of America	22	4.04%
Australia	21	3.86%
Belgium	16	2.94%
Germany	15	2.76%
Spain	14	2.57%
Slovenia	10	1.84%
Ireland	9	1.65%
Canada	7	1.29%
India	7	1.29%
Norway	7	1.29%
Tunisia	5	0.92%
Austria	4	0.74%
Croatia	3	0.55%
Portugal	3	0.55%
Romania	3	0.55%
Albania	2	0.37%
China	2	0.37%
Czech Republic	2	0.37%
Kuwait	2	0.37%
Pakistan	2	0.37%
Angola	1	0.18%
Bangladesh	1	0.18%
Brazil	1	0.18%

Bulgaria	1	0.18%
Cyprus	1	0.18%
Finland	1	0.18%
Georgia	1	0.18%
Ghana	1	0.18%
Hungary	1	0.18%
Indonesia	1	0.18%
Iran (Islamic Republic of)	1	0.18%
New Zealand	1	0.18%
Peru	1	0.18%
Singapore	1	0.18%
Slovakia	1	0.18%
Sweden	1	0.18%
Thailand	1	0.18%
Turkey	1	0.18%
Total	544	100%

Appendix A – full results statistical analysis

Group comparisons, HADS-A

- An univariate ANOVA showed the presence of significant differences between participants who have support from institution programs (n = 101) vs. participants who have support from colleagues/family/friends (n = 162) vs. participants who have no support at all (n = 72) (mean ± SD: 6.30 ± 3.85 vs. 7.12 ± 3.82 vs. 7.81 ± 4.03; F(2, 332) = 3.296, p = .038, partial η^2 = 0.02).
- Tukey HSD post hoc tests revealed a statistically significant difference between people who receive support from institution programs and people who have no support (-1.509 95% CI (-2.92 to -0.10), p = .032).
- No significant differences were detected on the HADS-A scores
    - between participants who are in training (n = 119) vs. not in training (n = 216) (mean ± SD: 7.47 ± 4.25 vs. 6.77 ± 3.68; t(215.21) = 1.505, p = .134, d= 0.18),
    - between PhD students (n = 79) vs. other professionals (n = 256) (mean ± SD: 7.32 ± 4.51 vs. 6.93 ± 3.70; t(112.14) = 0.770, p = .490, d = 0.09),
    - between participants with clinical duties (n = 162) vs. non-clinical duties (n = 173) in addition to research (mean ± SD: 6.88 ± 3.61 vs. 7.16 ± 4.16; t(333) = -0.655, p = .513, d = 0.07),
    - between participants who have virtual or non-virtual contacts with colleagues/friends/family (n = 328) vs. no contact at all (n = 7) (mean ± SD: 7.02 ± 3.92 vs. 7.14 ± 2.97; t(333) = -0.083, p = .934, d = 0.03),
    - between participants who have taken measures to cope with isolation (n = 311) vs. no measures (n = 24) (mean ± SD: 7.06 ± 3.90 vs. 6.50 ± 3.96; t(333) = 0.678, p = .498, d = 0.14),
    - between participants who work at the office (n = 78) vs. from home [M2] (n = 257) (mean ± SD: 7.50 ± 4.15 vs. 6.88 ± 3.82; t(333) = 1.239, p = .216, d = 0.16).

Group comparisons on participants with clinically relevant symptoms, HADS-A ≥ 8

- Results of *t*-tests showed the presence of significant differences
    - between PhD students (n = 35) vs. other professionals (n = 103) (mean ± SD: 11.57 ± 2.79 vs. 10.53 ± 2.56; t(136) = 2.025, p = .045, d = 0.39).

For all other group comparisons, no significant differences were detected on the HADS-A scores (*p*-values > .05).

Group comparisons, HADS-D

- A univariate ANOVA showed the presence of statistically significant differences between participants who have support from institution programs vs. participants who have support from colleagues/family/friends vs. participants who have no support at all (mean ± SD: 4.29 ± 3.02 vs. 4.80 ± 3. 32 vs. 6.56 ± 4.06; F(2, 165.97) = 8.094, p < .001, partial η^2 = 0.06).
- Games-Howell post hoc tests revealed statistically significant differences between people who have no support and both people who receive support from institution programs (2.268 95% CI (0.93 to 3.61), p < .001) and people who receive support from colleagues/family/friends (1.753 95% CI (0.47 to 3.04), p = .004).
- Results of t-tests showed the presence of significant differences on the HADS-D scores
    - between participants who have virtual or non-virtual contacts with colleagues/friends/family vs. no contact at all (mean ± SD: 4.97 ± 3.42 vs. 7.57 ± 4.39; t(333) = -1.980, p = .049, d = 0.66).
    - between participants who work at the office vs. from home (mean ± SD: 5.94 ± 4.23 vs. 4.75 ± 3.14; t(104.02) = 2.297, p = .024, d = 0.32).
- No significant differences were detected
    - between participants who are in training vs. not in training (mean ± SD: 5.31 ± 3.97 vs. 4.87 ± 3.14; t(200.38) = 1.056, p = .292, d = 0.12),
    - between PhD students vs. other professionals (mean ± SD: 5.04 ± 3.80 vs. 5.02 ± 3.35; t(333) = 0.041, p = .967, d = 0.01),
    - between participants with clinical duties vs. non-clinical duties in addition to research (mean ± SD: 5.24 ± 3.63 vs. 4.82 ± 3.28; t(333) = 1.112, p = .267, d = 0.12)

    - between participants who have taken measures to cope with isolation vs. no measures (mean ± SD: 5.00 ± 3.34 vs. 5.38 ± 4.79; t(24.76) = -0.380, p = .707, d = 0.09).

Group comparisons on participants with clinically relevant symptoms, HADS-D ≥ 8

- Results of t-tests showed the presence of significant differences between
    - participants who are in training (n = 31) vs. not in training (n = 40) (mean ± SD: 11.03 ± 2.36 vs. 9.93 ± 1.81; $t(69) = 2.235$, $p = .029$, $d = 0.52$)
    - between participants who have virtual or non-virtual contacts with colleagues/friends/family (n = 69) vs. no contact at all (n = 2) (mean ± SD: 10.32 ± 2.08 vs. 13.50 ± 2.12; $t(69) = -2.136$, $p = .036$, $d = 1.51$).

For all other group comparisons, no significant differences were detected on the HADS-D scores (p-values > .05).

Correlation analyses

- Significant negative correlations were found:
    - between anxiety symptoms and years of research experience ($r_s(333) = -0.148$, p = .007)
    - between anxiety/depressive symptoms and the productivity levels after COVID-19 outbreak (HADS-A: $r_s(333) = -0.112$, p = .0.40; HADS-D: $r_s(333) = -0.235$, p < .001)
    - between anxiety/depressive symptoms and the impact of isolation on mental health and wellbeing (HADS-A: $r_s(333) = -0.384$, p < .001; HADS-D: $r_s(333) = -0.411$, p < .001).
- Significant positive correlations were found:
    - between anxiety/depressive symptoms and feeling guilty about the current productivity levels (HADS-A: $r_s(333) = 0.312$, p < .001; HADS-D: $r_s(333) = 0.334$, p < .001)
    - between anxiety/depressive symptoms and worry about mental health in case of prolonged isolation (HADS-A: $r_s(333) = 0.402$, p < .001; HADS-D: $r_s(333) = 0.441$, p < .001).

Chi square tests (Additional analyses were performed to investigate group differences based on the cut-off score (≥8) for both the HADS-A and HADS-D.)

- HADS-A, chi-square tests showed a statistically significant difference on:
    - The 'current workplace' variable (people who work at the office: 41 scored above the HADS-A cut-off score, 37 below the cut-off point; people who work from home: 97 scored above the HADS-A cut-off score, 160 below the cut-off point; $\chi2(1) = 5.426$, p = .020).
- HADS-D, chi-square tests showed statistically significant differences on:
    - The 'current work place' variable (people who work at the office: 26 scored above the HADS-D cut-off score, 52 below the cut-off point; people who work from home: 45 scored above the HADS-A cut-off score, 212 below the cut-off point; $\chi2(1) = 8.971$, p = .003)
    - The 'support received to cope with mental health' variables (participants who have support from institution programs: 13 scored above the HADS-D cut-off score, 88 below the cut-off point; participants who have support from colleagues/family/friends: 30 scored above the HADS-D cut-off score, 132 below the cut-off point; participants who have no support: 44 scored above the HADS-D cut-off score, 28 below the cut-off point; $\chi2(1) = 18.381$, p < .001).

For all other group comparisons, no significant differences were detected between participants who scored above either the HADS-A or HADS-D cut-off point (all p-values > .05).

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* 1. What is your name ? **this information will remain anonymous!**

* 2. In what country do you work?

* 3. How many years of research experience do you have?

- I do not work in research
- < 3 years
- 3-5 years
- 6-9 years
- 10-15 years
- >15 years

* 4. What is your position?

- MSc student
- PhD student
- MD resident
- Medphys training / residency training
- Medical physicist
- Radiation/clinical oncologist
- RTT
- Biologist
- post doc
- lecturer
- assistant professor
- associate professor
- full professor
- Other (please specify)

* 5. What is your field of research?

- [ ] clinical/radiation oncology
- [ ] medical physics
- [ ] radiobiology
- [ ] computer/data science
- [ ] radiotherapy technology (RTT)
- [ ] Other (please specify)

* 6. What other duties do you have (in addition to your research)?

- [ ] exams, courses to validate
- [ ] teaching duties
- [ ] clinical duties
- [ ] organisational / logistics duties
- [ ] no other duties
- [ ] Other (please specify)

* 7. You currently work:

- ( ) completely from home
- ( ) part time from home
- ( ) completely at the office/lab/clinic

* 8. Do you feel equally productive as pre-covid ?

- ( ) a lot less
- ( ) a little less
- ( ) about equally productive
- ( ) a little more
- ( ) a lot more

* 9. Do you feel guilty about your productivity?

- ◯ yes a lot
- ◯ yes a little
- ◯ not much
- ◯ not at all

* 10. How much contact do you currently have?

- ☐ I have little or no contact (virtual or non-virtual) with anyone
- ☐ I have virtual contacts with friends and/or family
- ☐ I have virtual contacts with colleages
- ☐ I have non-virtual contacts with friends and/or family
- ☐ I have non-virtual contacts with colleagues

* 11. Do you feel an impact of isolation on your mental health/well being at the moment?

- ◯ a large negative impact
- ◯ a small negative impact
- ◯ no impact
- ◯ a positive impact

* 12. Are you worried about you mental health if the isolation period continues?

- ◯ I am very worried I won't be able to take it much longer
- ◯ I am a little worried it will become an issue soon
- ◯ I think I can continue like this for a few more weeks but not months
- ◯ I think I can continue like this for a few months or more

* 13. What measures do you take to cope with isolation?

- [ ] online coffee breaks/lunches/socials with friends/family
- [ ] online coffee breaks/lunches/socials with colleagues
- [ ] more work-related online meetings
- [ ] exercise at home
- [ ] picked up a new hobby
- [ ] go for walks with few people (depends on government regulations!)
- [ ] nothing
- [ ] Other (please specify)

* 14. Do you feel like these measures (Q13) are helping?

- ( ) a lot
- ( ) a little
- ( ) no
- ( ) I entered "nothing" above

* 15. Do you have support to cope with mental health?

- [ ] yes my institution has a program and reminded me of it
- [ ] yes my institution created a program
- [ ] yes I can talk to my supervisor/boss/colleagues about my mental health
- [ ] there may be a program but I was not reminded of it
- [ ] yes I can talk to friends/family
- [ ] no there is nothing available to me

* 16. Do you wish to take a depression and anxiety test (2-5 additional minutes)?

- ( ) Yes
- ( ) No

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HADS test

The Hospital Anxiety and Depression Scale (HADS) was devised 30 years ago by Zigmond and Snaith (The Hospital Anxiety and Depression Scale. Acta Psychiatr Scand 1983;67:361–370) to measure anxiety and depression in a general medical population of patients.

For each scale separately (A= anxiety, D= depression), a score below 7 indicate a non-case. 8-10 indicate a mild case; 11-14 indicate a moderate case; 15-21 indicate a severe case.

Do not take too long to think about your reply, your immediate answer is best.

* 1. A. I feel tense or "wound up"

- Most of the time (3)
- A lot of the time (2)
- From time to time, occasionally (1)
- Not at all (0)

* 2. D. I still enjoy the things I used to enjoy

- Definitely as much (0)
- Not quite so much (1)
- Only a little (2)
- Hardly at all (3)

* 3. A. I get a sort of frightened feeling as if something awful is about to happen

- Very definitely and quite badly (3)
- Yes, but not too badly (2)
- A little, but it doesn't worry me (1)
- Not at all (0)

* 4. D. I can laugh and see the funny side of things

- As much as I always could (0)
- Not quite so much now (1)
- Definitely not so much now (2)
- Not at all (3)

* 5. A. Worrying thoughts go through my mind

- A great deal of the time (3)
- A lot of the time (2)
- From time to time, but not too often (1)
- Only occasionally (0)

* 6. D. I feel cheerful

- Not at all (3)
- Not often (2)
- Sometimes (1)
- Most of the time (0)

* 7. A. I can sit at ease and feel relaxed

- Definitely (0)
- Usually (1)
- Not often (2)
- Not at all (3)

* 8. D. I feel as if I am slowed down

- Nearly all the time (3)
- Very often (2)
- Sometimes (1)
- Not at all (0)

* 9. A. I get a sort of frightened feeling like "butterflies" in the stomach

- Not at all (0)
- Occasionally (1)
- Quite often (2)
- Very often (3)

* 10. D. I have lost interest in my appearance

- Definitely (3)
- I don't take as much care as I should (2)
- I may not take quite as much care (1)
- I take just as much care as ever (0)

* 11. A. I feel restless as I have to be on the move

- Very much indeed (3)
- Quite a lot (2)
- Not very much (1)
- Not at all (0)

* 12. D. I look forward with enjoyment to things

- As much as I ever did (0)
- Rather less than I used to (1)
- Definitely less than I used to (2)
- Hardly at all (3)

* 13. A. I get sudden feelings of panic

- Very often indeed (3)
- Quite often (2)
- Not very often (1)
- Not at all (0)

* 14. D. I can enjoy a good book or radio or TV program

- Often (0)
- Sometimes (1)
- Not often (2)
- Very seldom (3)