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Supplement 1

**Final protocol approved by the ethics committee
(from June 10, 2022)**

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198 **Final protocol approved by the ethics committee**

199 **1. General information**

200 **1.1 Project title**

201 COvid-19 Pandemic and Exercise for Health Care Workers (COPE HCW) Trial: A randomized study examining
202 physical activities and wellbeing.

203

204 **1.2 Research Funding**

205 Number: F21-01483

206 Title: Using a mobile health aerobic exercise program to improve psychological distress in healthcare professionals:
207 a randomised controlled trial

208 Sponsor: Michael Smith Health Research BC

209

210 Number: F22-00588

211 Title: COVID-19 Pandemic and exercise for healthcare workers (COPE HCW) trial: a randomized study examining
212 physical activities and wellbeing

213 Sponsor: UBC School of Kinesiology

214

215 **1.3 Research risk**

216 There is no considerable risk to the participants, in line with the definition provided by TCPS - that “the probability
217 and magnitude of possible harms implied by participation in the research are no greater than those encountered by
218 participants in those aspects of their everyday life that relate to the research.” Participants in the current study, in
219 their everyday life, may have themselves downloaded a physical activity or yoga app.

220 **2. Summary of study**

221 **2.1 Brief statement about the project**

222 The current project is designed to address the problem of elevated depression and stress among health care workers
223 (HCWs). We will test the extent to which a 12-week mobile health aerobic exercise intervention (4 days/week for 20
224 minutes/day) impacts HCWs reported depression. We propose a 2-arm (exercise and waitlist control) parallel
225 randomised controlled trial, with 560 underactive participants recruited from Providence Health Care. Participants
226 will complete an online questionnaire (baseline and every 2 weeks until week 12, and again at week 24) assessing
227 depressive symptoms (primary outcome), stress, flourishing, resilience, life satisfaction, burnout, work-family
228 spillover, sleep quality, and absenteeism (secondary outcomes).

229

230 2.2 Rationale

231 2.2.1 Stress and Burnout in Healthcare workers (HCWs).

232 HCWs account for the largest sector of government employees in Canada¹. Regulated nurses - registered nurses,
233 nurse practitioners, licensed practical nurses, and registered psychiatric nurses - constitute the most common HCW,
234 with over 93% of HCWs being registered nurses across Canada². The most recent National Survey of the Work and
235 Health of Nurses reported that compared with the average working Canadian, nurses work longer shifts, more
236 overtime, more unpaid overtime, and have more conflict at work. Nurses also report greater stress, depression, more
237 absenteeism, higher rates of medication use, and poorer physical health than the average employed Canadian. Shift
238 work, high job strain and low autonomy have all been linked with decreased physical and mental health among
239 nurses³. Similarly, physicians are highly stressed and at risk for burnout and disease: 92% of physicians - including
240 family medicine, medical specialists, and surgical specialists - work in urban areas and work more than 54 hours per
241 week, excluding on-calls^{2,4}. A recent National Physician Health Survey, sampling over 2500 physicians, reported
242 high levels of emotional exhaustion (26%), overall burnout (30%), depression (34%), and suicidal ideation (9-
243 19%)⁵. Physicians experience more than twice as much high work stress (64% compared to 27%) as the general
244 Canadian population^{1,6}. The mental health conditions reported by physicians is a direct consequence of their
245 workload, which is physically demanding and accompanied by sleep deprivation^{7,8}.

246

247 2.2.2 Stress and burnout during COVID-19

248 During global pandemics, HCWs report experiencing even greater negative mental health consequences than in
249 general^{9,10}. Recent international studies have shown that there is an increase in reported depression, anxiety,
250 insomnia, and distress (34.0-71.4%) in HCWs who have been exposed to COVID-19 patients^{11,12}, or when HCWs
251 have been required to undergo quarantine or self-isolation, or known someone who contracted or died from the
252 virus¹³. It is expected that the heavy workload and the psychological and physical health impacts of the current
253 pandemic will have long-term negative consequences on the health system,¹⁴ underscoring the need to support
254 HCWs to reduce their psychological distress and preserve their health. Ultimately, attention to these structural
255 influences on HCW's health is necessary to protect the HCWs workforce from burnout and illness that contributes
256 to the workplace's loss of experienced HCWs. Institutional investment needs to be pervasive, requiring leadership
257 behaviours and positive organisational cultures to promote autonomy and communicate with HCWs^{15,16}. Also,
258 health check-ups and exercise facilities near the workplace should be mandatory practice for medical institutions.
259 While institutional policy changes are required to address the mental and physical health consequences resulting
260 from HCW's workload and stressors, there are also opportunities for HCWs to manage their self-regulated health
261 through lifestyle modifications (e.g., increasing their physical activity levels¹⁷⁻¹⁹) as a means to improve coping and
262 reduce stress.

263

264 2.2.3 Stress and Non-Communicable Diseases (NCDs)

265 As defined by Cohen and colleagues, stress is defined broadly as "a set of constructs representing stages in a process
266 by which environmental demands that tax or exceed the adaptive capacity of an organism occasion psychological,

267 behavioural, and biological responses that may place people at risk for disease”²⁰. Chronic psychological stress (e.g.,
268 work-related stress) is associated with higher risk of depression, cardiovascular disease (CVD), diabetes,
269 autoimmune diseases, obesity, and respiratory infections²¹⁻²⁴. One study found that individuals who report high
270 levels of work-related stress, social isolation, or interpersonal stress are 1.3 to 2.5 times more likely to have CVD in
271 their life, which is the leading cause of death from NCDs worldwide²⁵. Based on this research, it is not surprising
272 then that the Public Health Agency of Canada emphasises the significance of high levels of stress or prolonged
273 stress to NCDs²⁶, in addition to health behaviours (e.g. physical inactivity, smoking) and biological factors (e.g.,
274 high blood pressure).

275

276 **2.2.4 Behaviour change for stress reduction**

277 The question is, how can stress be reduced in HCWs at the individual level? It is well known that chronic
278 psychological stress and adversity limit engagement in healthy behaviours²⁷⁻²⁹. However, physical activity has been
279 shown to have several positive effects on stress-related physical (i.e., cortisol, telomere length)³⁰⁻³³, and
280 psychological (e.g., negative affect³⁴, rumination,³⁵ and perceived burden or depressive symptoms^{36,37}) outcomes.
281 Physical activity interventions can be implemented using various methodologies, from strict requirements to
282 exercise at specific fitness centres monitored by coaches, through to mobile app (mhealth) applications whereby
283 participants are provided free access to a mobile app and are allowed to complete exercises at home. Mhealth
284 interventions have similar retention rates to in-person interventions (60% to 100%³⁸) and allow for diversity in
285 workouts and the completion of workouts at-home or in an office requiring very little space and flexibility in time
286 allocation. Mhealth interventions might prove to be a successful approach to improving lifestyles of HCWs, since
287 HCWs need an easily accessible approach to exercise that can be completed with little space (e.g., in office) and
288 requiring no extra travel to a fitness centre.

289

290 To our knowledge, there are no studies that have used a mobile application promoting exercise to reduce the
291 depressive symptomatology, psychological distress, and physical symptoms among HCWs in a hospital or home
292 setting^{39,40}. Dr. Puterman’s COVID-19 Pandemic and Exercise (COPE) trial (<https://www.copetrial.ca/>) is the first to
293 study the impact of a mhealth-delivered program designed for physically distanced adults at the start of the
294 pandemic. Results indicate significant treatment effects between those randomized to the active groups (who
295 experienced a reduction in depressive symptoms over the 6-week period) compared to waitlist control (who
296 remained elevated in depressive symptoms). Importantly, these effects were even more apparent in the adults with
297 pre-randomization high levels of depression⁴¹. Also, the group that was given access to both the HIIT and yoga
298 apps had the highest adherence rates for trial completion (58%) compared to those who received access to either but
299 not both apps (53% or 40% for yoga and HIIT, respectively). Considering the above, the purpose of the present
300 study is to evaluate the uptake and adherence of a 12-week mhealth physical activity (access to all the mobile
301 “Down Dog” apps: HIIT, yoga, barre, running) intervention in physically less active HCWs, to examine whether the
302 intervention leads to improvement in depressive symptomatology among those randomized to the intervention
303 versus waitlist control group. Specifically, we aim to focus on physical activities requiring little physical space

304 and/or equipment that are easily completed at home, in one's neighbourhood, or in a small office using the suite of
305 mobile apps from the company "Down Dog".

306 **2.3 Objectives**

307 The primary objectives of this project are to test a mhealth physical activity intervention, using the "Down Dog"
308 suite of apps, in physically less active HCWs, and to test whether the intervention leads to improvement in
309 depressive symptomatology among those who are randomized to the intervention compared to the waitlist control
310 group. The secondary objectives of this project are to test the intervention effects on a broader suite of mental health
311 concepts, including stress, flourishing, resilience, life satisfaction, burnout, work-family spillover, sleep quality, and
312 absenteeism. Thirdly, we seek to identify barriers and facilitators to increasing levels of physical activity during the
313 intervention, from the perspective of stakeholders such as nurses, health service administrators, and physicians, and
314 to determine the efficacy of the intervention, using qualitative interviews and focus group discussions.

315

316 **2.4 Design**

317 The intervention is a parallel RCT, with 560 participants allocated in equal numbers to one of two conditions: 1)
318 exercise group, or 2) waitlist control group. Random allocation to conditions will be performed using standard RCT
319 methodologies (e.g., allocation concealment, coordinators blinded to randomization) to reduce bias. Following
320 randomization, participants in the exercise group will be asked to engage in physical activity (using any of the Down
321 Dog apps), 4 days a week for 20 minutes a day for 12 weeks. Adherence will be monitored by the study team by
322 accessing app tracking data, which will be done with de-identified data linked to a participant number. Participants
323 will complete outcome questionnaires at baseline, every two weeks for 12 weeks, and at 24 weeks (follow-up) to
324 assess changes in outcomes over time.

325

326 **2.5 Study Population**

327 560 participants from one of the 10 Providence Health Care centres will be recruited through advertisements posted
328 on online tools (i.e., Facebook, Twitter, and Instagram), posters placed throughout the hospital and other PHC
329 facilities, email distribution lists to employees, and via e-communication channels such as the PHC News and the
330 Care Connection newsletter. We will recruit insufficiently active individuals over the age of 18 years old, who have
331 not retired, and who are capable of moderate physical activity. To be eligible, participants must also work at a
332 Providence Health Care centres.

333

334 **2.6 Research Design**

335 The proposed study is a parallel randomized controlled trial. Healthcare workers will visit our website
336 (<https://www.copehcwtrial.com>) to read more information about the study. Interested adults will be asked to email
337 the PI's general lab email or fill out the fillable form on the website for more information. The project coordinator
338 (Brook) will schedule the best time to reach the interested adult by phone, at which time eligibility will be assessed
339 and confirmed (collected through a Qualtrics research assistant-only questionnaire to ease eligibility screening,
340 information gathering, decision making, and storage on a secured website). Eligible participants will then be

341 provided information about the study, similar to that presented on the website, and will explained the importance of
342 randomization and completing all questionnaires.

343

344 Upon agreement, the research assistants (RAs) will send each eligible participant a link to the online consent form
345 and a baseline questionnaire to complete once consent is received (via Qualtrics). Participants that do not pass the
346 PAR Q will be referred to the study exercise physiologist or study physician for an assessment. Based on
347 physiologist expertise and assessment, participants will either be approved to participate, or will be asked to seek
348 approval (via note) from their family physician. Once the baseline survey has been completed, the RAs will re-
349 contact the participant by email to inform them of which group they have been randomized to, and to provide them
350 with a step-by-step guide for downloading and accessing the Down Dog apps (if randomized to the exercise group).
351 The RAs (currently being interviewed, will be added to BREB as soon as hired) will be the participants' main
352 contact person for the Down Dog apps. The project coordinator (Brook) will coordinate completion of all Qualtrics
353 surveys with the participants.

354

355 **2.7 Randomization**

356 Participants will be randomized to either the waitlist control group (N = 280) or the exercise group (N = 280).
357 Sequence generation will be completed using the randomizer.org tool for researchers. One hundred blocks of 4
358 unique numbers (1 and 2) with each number designating one of the two randomization groups will be completed.
359 Ben Hives will generate the randomization sequence and will remain blind to the participants' allocations
360 throughout the trial. Participants will be randomized in the order that they complete the baseline survey, and Ben
361 will inform the project coordinator (Brook) of the group allocation once the baseline survey is complete.

362

363 The mHealth platform to be used by the exercise group is Down Dog, which has a suite of apps for yoga, HIIT,
364 barre, and running workouts. Down Dog has agreed to provide free memberships for one year to all participants in
365 the study. To ensure participant de-identification on the Down Dog platform, each participant will receive a
366 Participant ID which will be pre-registered by the study coordinator on the Down Dog platform. Randomized
367 participants will be provided instructions for downloading the apps onto their phone or a link to the website to be
368 used on their computer.

369

370 All participants (i.e., regardless of condition) will be asked to complete the outcome survey every two weeks until
371 the completion of the 12-week intervention. Waitlist control group participants will receive a free one-year
372 membership to the apps at the end of the 12 weeks. After the 12-week intervention, to determine the accessibility
373 and feasibility of the intervention, we will conduct individual semi-structured qualitative interviews with 22 HCWs
374 (or until data saturation) who took part in the exercise arm of the study (target recruitment = 50% participants who
375 adhered to the intervention and 50% who did not). Following the thematic analysis of interviews, 50 different
376 HCWs from the exercise arm (target recruitment = 50% participants who adhered to the intervention and 50% who
377 did not) will be invited to participate in focus group discussions to elaborate on themes extracted from the

378 qualitative interviews and provide insights on what did and did not work during the trial. Following another 12
379 weeks (i.e., at the 24-week mark), all participants will be asked to complete the final follow-up questionnaire.
380

381 **2.8 Outcomes**

382 After consenting, eligible participants will complete an online baseline questionnaire assessing the primary outcome
383 of depressive symptomatology (10-Item Center for Epidemiologic Studies Depression Scale (CES-D)⁴¹ and
384 secondary outcomes including stress (1-item scale), flourishing (8-item Flourishing and positive and negative
385 feelings)⁴², life satisfaction (5-item Satisfaction with life scale⁴³), burnout (16-item Maslach Burnout Inventory⁴⁴),
386 resilience (6-item Brief Resilience Scale⁴⁵), work-family spillover (6-item work family experience scale⁴⁶),
387 absenteeism (# of days of sick leave), and sleep quality (1-item; Pittsburgh Sleep Quality Index⁴⁷). We will also
388 measure potential covariates including health behaviours (alcohol consumption, smoking), self-reported physical
389 activity outside of app use (minutes/week), and demographics (age, sex, gender, ethnicity, current living status, and
390 socioeconomic status [employment status; income; education]). Tertiary outcomes will include percentage of
391 adherence to the weekly required exercise (using the Down Dog apps). This information will be downloaded for
392 each participant directly from the Down Dog platform weekly by research assistants.
393

394 **2.9 Payment**

395 For each completed questionnaire, including the baseline questionnaire pre-randomization, participant IDs will be
396 added to a draw (maximum of 7 times) to win 1 of 2 Apple watches or 1 of 20 gift cards valued at \$100 each. Also,
397 participants will be compensated \$35 for their participation in the individual interview or focus group discussion.

398 **3. Inclusion criteria**

399 All individuals who currently do not meet recommendations for a physically active lifestyle, are over the age of 18
400 inclusive, who are not retired, work at a PHC centre, and are without risk factors for cardiovascular events are
401 eligible for inclusion.
402

403 To screen for the low active participants, we will use the L-CAT. All participants who score 1-3 will be included in
404 the study. Those who score 4-6 will be excluded.
405

406 They must also work at a Providence Health Care centre.

407 **4. Exclusion criteria**

408 Participants must be cleared to participate in exercise. The 2021 Physical Activity Readiness Questionnaire for
409 Everyone (PAR-Q+) will be used to minimize any risk of exercise and ensure the safety of individuals⁴⁸. Given that
410 exercise is a risk factor for cardiovascular events, participants must report any family history of cardiovascular
411 disease, stroke or myocardial infarction⁴⁹. If participants do report a family history of cardiovascular events, they

412 must receive a note from their family physician clearing them for moderate to high intensity training. If payment is
413 required for this clearance, participants will be reimbursed.

414

415 In addition, as informed consent requires individuals to be at least 18 years old, participants under the age of 18 will
416 be excluded. Participants who are currently retired from their work or who do not currently work at a PHC centre
417 are ineligible to participate. Participants without personal smartphones or computers, and those without internet
418 service at home will be excluded.

419 **5. Recruitment**

420 (a) Participants will be recruited from PHC centres. Interested participants will reach out to the study team by the
421 provided email or fillable online form to schedule their appointment, and will then be contacted by one of the team
422 members listed in this application to schedule a screening phone call.

423

424 (b) Recruitment will be completed with online advertisements placed on social media (i.e., Facebook, Twitter,
425 Instagram), as well as through Providence Health Care internal newsletters and posters in the buildings. Before
426 publication, one of the members of the study team (VGB) will contact the people in charge of the Facebook group to
427 obtain permission. This information will be included in the post: “By sharing, commenting and/or “liking” this post
428 you are publicly identifying yourself with this study”.

429

430 (c) Prospective participants will self-identify by contacting our lab’s email address or by completing the online
431 submission form on the website. Once the participants contact the lab, a study member will call them schedule a
432 phone screened to assess eligibility. Phone screening will be conducted by trained volunteer research assistants.

433

434 (d) Recruitment will occur both online and in-person (via posters) at PHC centres.

435

436 (e) Booths will be held at the hospital (Saint-Paul and Mount Saint Joseph hospital) to inform healthcare workers
437 about the study. Prospective participants will be able to receive information and register online for the screening
438 interview. We will be obtaining permission from the hospitals to set up the booths and we will follow hospital
439 protocols in relation to COVID-19.

440 **6. Procedures**

441 Following recruitment and consent, participants will be provided a link to an online baseline questionnaire assessing
442 well-being and health. Once completed, the RA will email the participant and inform them of the group they have
443 been randomized to and provide step-by-step instructions for accessing the Down Dog apps (exercise group only).

444 Sequence generation will be completed using the randomizer.org tool for researchers. One hundred blocks of 4
445 unique numbers (1 and 2) with each number designating one of the two randomization groups will be completed.

446 Ben Hives will generate the sequence and will remain blind to the participants’ allocations throughout the trial.

447 Participants will be randomized in the order they complete the baseline survey, and Ben will inform the project
448 coordinator (Brook) of the group allocation once the baseline survey is complete.

449

450 Every two weeks (for 12 weeks), all participants (i.e., regardless of condition) will be asked via an email sent by the
451 project coordinator to complete a brief questionnaire. Participants will also be asked by the project coordinator to
452 complete a follow-up survey at week 24.

453

454 **6.1 Baseline questionnaire and randomization**

455 • If you consent to participate, you will be directed to a website to complete the baseline survey about your current
456 state of well-being and health.

457 • In a similar manner to flipping a coin, you will then be randomly assigned to one of two groups: (1) exercise group
458 or (2) waitlist control group.

459

460 **6.2 Weeks 1 – 12**

461 **6.2.1 Exercise group**

462 • For the duration of the 12 weeks, you will be completing any of the physical activities customizable within the
463 Down Dog apps. You will be asked to complete a minimum of four 20-minute workouts per week.

464 • Research staff will set up a study email address for you and your account on the Down Dog site, to ensure your
465 anonymity throughout the study and to allow us to download your weekly exercise data. We will also guide you on
466 how to download and use the suite of apps on your mobile devices or computers/ tablets.

467 • Every two weeks, you will receive (via email) a survey to complete.

468

469 **6.2.2 Waitlist group**

470 • For the duration of the 12 weeks, you will be asked to continue your typical, pre-study daily and weekly routine,
471 maintaining the physical activity you were completing before the start of the study.

472 • At the end of the 12-week study, you will receive a free one-year membership to Down Dog and will be able to
473 access any of the offered physical activities.

474 • Every two weeks, you will receive (via email) a survey to complete.

475 No personal data will be stored on the Down Dog platform. Participants' accounts will be set up using a dummy
476 email address, which includes their Study ID, but no identifying information.

477

478 **6.2.3 Individual semi-structured interviews at week 12**

479 • If you were randomized to the exercise group, you may be selected and asked to participate in the post-intervention
480 individual semi-structured interviews. You will be asked to commit 30-90 minutes of your time to an online or in-
481 person discussion with one of our research assistants to discuss your use of the apps and participation in the study.

482

483 **6.3 Week 24**

484 **6.3.1 Exercise group**

- 485 • You will have access to Down Dog for an additional 1 year and will be able to use the apps as you wish.
- 486 • At week 24 (12 weeks after your initial 12-week participation in the intervention), you will receive a check-in
- 487 email from the project coordinator with the final survey to complete.
- 488 • We will also record your use of the Down Dog apps at week 24.

489

490 **6.3.2 Waitlist group**

- 491 • You will receive a free one-year membership to the suite of Down Dog apps to use as you wish at the end of the
- 492 first 12 weeks. We will set up your accounts for you, so that we can monitor your workouts on a weekly basis.
- 493 • After having access to the apps for 12 weeks (i.e., 24 weeks after randomization) you will receive a check-in email
- 494 with the final survey to complete.

495

496 **6.4 Focus groups at week 24**

497 A random group of participants from the exercise group (target recruitment = 50% individuals who adhered to the
498 intervention and 50% who did not) will be asked to participate in a series of focus group discussions, where they
499 will be asked to elaborate on themes extracted from the individual qualitative interviews conducted at week 12.

500

501 No personal data will be stored on the Down Dog app. The accounts will be set up using a dummy email address,
502 which includes Study ID, but no identifying information.

503 **7. Participant information and consent process**

504 **7.1 Time to participate**

505 Following randomization, participants will be asked to commit 30-40 minutes to complete a baseline survey and 15-
506 20 minutes 7 additional times (weeks 2, 4, 6, 8, 10, 12, 24) to complete the online surveys, totalling approximately
507 135-180 minutes.

508

509 Participants randomized to the exercise group will be asked to commit 20 minutes of exercise on 4 days per week,
510 totalling 80 minutes weekly, for a total of 16 hours over the course of the 12 weeks intervention.

511

512 Participants interested in participating in the end of study interviews will be asked to commit 30-90 minutes for an
513 online discussion with a research assistant. Participants interested in participating in the end of study focus group
514 discussions will be asked to commit 90-120 minutes to engage in a group discussion with their peers as well as a
515 research assistant.

516

517 In total, participants in the exercise group will be asked to devote 1095-1350 minutes while in the study. Participants
518 in the waitlist control group will be asked to devote 135-180 minutes.

519

520 7.2 Risks and mitigation

521 There are limited risks involved in the current study. Participants who are not able to exercise due to physical
522 limitations will not be eligible to participate in the study. Participants are at equal risk if they were to download the
523 app in their everyday life and begin working out at home on their own.

524

525 7.3 Potential benefits

526 Participants' psychological and physical health might benefit from structured exercise. There is strong evidence that
527 physical activity not only improves physical health, but also improves one's symptoms of mood disorders, positive
528 emotions, and sense of control. Regular physical activity can also reduce the risk of developing a mental illness,
529 such as depression or anxiety. Additionally, participants will receive a free 1-year membership to the Down Dog
530 platform which provides many home workout activities with customizable options. For each completed
531 questionnaire, participants in both the exercise and waitlist groups will be added to a draw (for a maximum of 7
532 entries) for the chance to win one of two Apple watches or one of 20 \$100 gift cards. All participants who have
533 completed at least the baseline questionnaire will be eligible for the draw. The approximate chance of being drawn
534 for one of the prizes is 1 in 25.

535 Also, participants will be compensated \$35 for their participation in the individual interview or focus group
536 discussion.

537 7.4 Incentives

538 For each completed questionnaire, participants will be added to a draw (for a maximum of 8 entries) to win one of
539 two Apple watches or one of 20 gift cards valued at \$100 each. The draw will occur at the end of the 24 weeks of
540 the final participant participating in the study. All participants who have completed at least the baseline
541 questionnaire will be eligible for the draw. The approximate chance of being drawn for one of the prizes is 1 in 25.

542 Also, participants will be compensated \$35 for their participation in the individual interview or focus group
543 discussion.

544

545 7.5 Obtaining consent from participants

546 Participants will be sent an email with a link to an informed consent form which will be accessed via Qualtrics. The
547 consent form will be reviewed by phone with a research assistant and e-signed by the participant in Qualtrics. The
548 study coordinator will send a signed copy of the consent form to participants by day's end.

549

550 7.6 Timeline for recruitment

551 The study trial will recruit participants between March 2022 and March 2023.

552 8. Confidentiality**553 8.1 Security of Data During the Course of the Study**

554 Data collected via Down Dog's website is accessible to the team at Down Dog, however, each participant will be
555 anonymized. The project coordinator will register each participant on the Down Dog platform using a study

556 appointed gmail account. In gmail, we have set up an email account, copehcwtrial@gmail.com. To create individual
557 anonymized gmail accounts per participant, we can then create accounts that include copehcwtrial, followed by the
558 '+' symbol, followed by the PID of the participants. For example, for participant 322 we can create the account
559 copehcwtrial+PID322@gmail.com, and use that account to register the participant on the Down Dog platform. As a
560 result, Down Dog does not have any record of the actual name of the participants.

561

562 All questionnaire data will be collected via Qualtrics, whereby data are encrypted and FIPAA compliant. All data
563 will be housed in UBC and stored on OneDrive. If downloaded, data will be digitally saved on encrypted and
564 password-protected computers. Only research assistants and investigators on the project will have access to the
565 password. No participant data will be stored with identifying information. Participants will be differentiated by
566 alphanumeric participant ID.

567

568 **8.2 Access to data**

569 Researchers and investigators are the only ones who will have access to the full de-identified data set. The data will
570 be stored on OneDrive, and only investigators will be invited to the folder. Only investigators will have access to the
571 password protected computers in the locked room in the FAST Lab. PHC collaborator Agnes Black will not have
572 access to the data.

573

574 **8.3 Protection of personal information**

575 All participants will be assigned a random alphanumeric participation number. The participant identification (PID)
576 code will be used to associate data from the Down Dog platform and Qualtrics. During the intervention, the
577 participants' names and PID codes will exist together in order to inform participants of their ID number, if required.
578 This key will never be stored with other study data and will be password protected and encrypted. Once all data has
579 been collected and linked, this list will be deleted.

580

581 **8.4 Retention and destruction of data**

582 All data will be stored on UBC servers. PI Eli Puterman is responsible for all data. For destruction of the data
583 following the 10 years of storage, the encrypted hard drive containing the data will be formatted.

584

585 **8.5 Future use of data**

586 The data may be used to write a scientific report or report for the government. However, no identifying information
587 will be present, and all participants are made aware of this possibility in the informed consent form completed prior
588 to enrolment in the study.

589

590 **8.6 Feedback to participants**

591 At the completion of the study, if participants are interested in the results we will send them the full scientific report
592 once it has been peer reviewed and accepted for a journal submission.

593

594

Statistical analysis plan**595 9. Sample size rationale**

596 Using Optimal Design Software (Raudenbush et al., 2011), in order to detect a small effect size $\delta = .30$ based on a
597 two-level (non)linear growth model (six time points; level-1 residual variability = 8.798; level-1 coefficient
598 variability = 22.548) with Power (1 - β) set at .80 and alpha set at .05 for a seven time points repeated measures
599 design, 357 participants will be required across the two arms. With an additional 10 recruitment sites, we require an
600 additional 90 participants (for the possibility of nesting or for creation of 9 dummy variables to covary locations).
601 With a 20% expected attrition, a total of 560 HCWs will be randomized.

602

603 Using Optimal Design Software (Raudenbush et al., 2011), in order to detect a small effect size $\delta = .40$ based on a
604 two-level (non)linear growth model with Power (1 - β) set at .80 and alpha set at .05 for a seven time points repeated
605 measures design, 203 participants will be required across the two arms. With an additional 10 recruitment sites, we
606 require an additional 90 participants (for the possibility of nesting or for creation of 9 dummy variables to covary
607 locations). With a 20% expected attrition, a total of 366 HCWs will be randomized.

608

609 Using Optimal Design Software (Raudenbush et al., 2011), in order to detect a small effect size $\delta = .50$ based on a
610 two-level (non)linear growth model with Power (1 - β) set at .80 and alpha set at .05 for a seven time points repeated
611 measures design, 131 participants will be required across the two arms. With an additional 10 recruitment sites, we
612 require an additional 90 participants (for the possibility of nesting or for creation of 9 dummy variables to covary
613 locations). With a 20% expected attrition, a total of 276 HCWs will be randomized.

614 10. Statistical models

615 Means and SD, or counts and percentages, will be calculated for all continuous or categorical sociodemographic
616 variables, respectively. Analyses of variance or χ^2 analyses will be completed for the continuous and categorical
617 factors, respectively, to compare group differences. Imputation, using random forest methods,²⁸ will be conducted
618 for depression symptom score when the participant did not complete all items in the survey at any week (as
619 completed in our previous trial published in BJSM 2021, Puterman et al.). All descriptive statistics, multiple
620 imputation and visualisations will be run using R Statistical software (V.4.0.2).

621 All randomised participants will be included in the intent-to-treat analysis using Mplus (V.7.2). We will adopt
622 quadratic latent growth models based on the framework of structural equation models to account for non-linear
623 trends in CESD scores over the 6 weeks.

624 To examine the treatment effects in depressive symptoms on the subpopulation with high depressive symptoms at
625 the start of the program, we will restrict the sample to participants with CESD scores of ≥ 10 . If model fit is poor
626 when including the quadratic term, as evidenced in our previous publication, we will use free time scores of the

627 slope growth factor for non-linear trends. The equations are similar to those used for the quadratic latent growth
628 model, but only I and S are estimated, and S is freely estimated with specifying the first two time points to 0 and 1.
629 For all analyses, we will compute effect sizes at each week using Feingold's approach (Feingold, 2019) equivalent
630 to Cohen's d.

631 Three commonly used model fit indices will be used to ascertain model fit, namely a comparative fit index (CFI),
632 the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR).
633 The criteria for evaluating model fit will be designated with CFI values >0.90, and RMSEA and SRMR values <.08.
634 Maximum likelihood robust estimation will be used for all the latent growth models because this type of estimator
635 can easily handle outliers and missing data and provide more robust and accurate estimates.
636 Due to the randomization, no covariates will be employed in the analyses. The Benjamini-Hochberg procedure will
637 be employed to control for multiple comparisons to the secondary outcomes. These models will be completed with
638 two sets of: an intent-to-treat and a per protocol set. Alpha will be set at 0.05.

639 **10.1 Transformations**

640 Dummy variables will be created to denote assignment to condition. Reverse scoring will be done on items on the
641 CES-D, Brief Resilience, Burnout, and other scales, as per the scoring guides. No other transformations are planned
642 at this time.

643

644 **10.2 Inference criteria**

645 For the present study, three commonly used model fit indices will be used to ascertain model fit, namely a
646 comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean
647 square residual (SRMR). The criteria for evaluating model fit will be designated with CFI values >0.90, and
648 RMSEA and SRMR values <.08 (Hu & Bentler, 1998, 1999).

649

650 **10.3 Data exclusion**

651 Outliers can be caused by different sources, errors, random measurement errors, and the inclusion of a subgroup that
652 is not part of the target population. First, we will screen for outliers caused by data recording or entry errors and
653 correct these errors. Then, we will identify both univariate and multivariate outliers. The univariate outliers will be
654 examined using boxplot and z-scores (with a simple cut-off of ± 3 standard deviations). Multivariate outliers will be
655 examined by Mahalanobis distance; following Tabachnick and Fidell's suggestion, outliers will be defined if their
656 Mahalanobis distance values have a p-value < .001. After we identify outliers, we will check if these outliers are
657 legitimate data points or reflect a small subpopulation that we did not target. If the outliers are legitimate data points,
658 we will use statistical methods with robust estimation; if the outliers are not part of our target population, we will
659 exclude them from the main analyses.

660

661 **10.4 Missing data**

662 For the present study, full information maximum likelihood estimation with robust standard errors (MLR) will be
663 used. It will be computed with a Huber-White "sandwich" estimator, to handle missing data. This procedure uses all
664 available data for parameter estimation under the assumption that the data are missing at random.

665

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- 765

766 12. Appendix**767 12.1 Consent From**

Participant Information and Consent Form

768

769 COVID-19 Pandemic and Exercise for Healthcare Workers (COPE HCW) Trial: A randomized study examining
770 physical activities and wellbeing.

771

772 Funding Sources: Faculty of Education Start-up funds, Kinesiology Equipment and Research Accelerator Fund,
773 Michael Smith Foundation for Health Research

774

775 INTRODUCTION

776 You are being invited to take part in this research study involving approximately 400 healthcare workers who work
777 at one of the Providence Health Care (PHC) centres.

778

779 YOUR PARTICIPATION IS VOLUNTARY

780 Your participation is entirely voluntary. You may choose whether or not to take part in this study. Before you
781 decide, it is important for you to understand what the research involves. This consent form will inform you about the
782 study, why the research is being done, what you will be asked to do during the study, and the possible benefits, risks
783 and discomforts.

784

785 If you wish to participate, you will be asked to sign this form. If you decide to take part in this study, you are still
786 free to withdraw at any time and will not be required to provide any reasons for your decision. If you do not wish to
787 participate, you do not have to provide any reason for your decision.

788

789 Please take time to read the following information carefully and to discuss it with your family, friends, and doctor
790 prior to deciding.

791

792 WHO IS CONDUCTING THE STUDY?

793 The study is being conducted by the Fitness, Stress, & Aging (FAST) Lab at the University of British Columbia, in
794 partnership with Providence Health Care (PHC). It is being funded by the start-up funds provided to the Principal
795 Investigator Dr. Eli Puterman by the Faculty of Education and by the Kinesiology Equipment and Research
796 Accelerator Fund. In addition to Dr. Puterman, this study is also being conducted by FAST Lab member,
797 Postdoctoral fellow Dr. Vincent Gosselin Boucher, with funding from the Michael Smith Foundation for Health
798 Research Trainee Award. Co-investigators include Drs. Mark Beauchamp, and Guy Faulkner in the School of
799 Kinesiology at UBC, Dr. Yan Liu at Carleton University, and Agnus (Aggie) Black at PHC.

800

801 WHY ARE WE DOING THIS STUDY?

802 Due to the current pandemic, healthcare workers are reporting an increase in their depression, anxiety, and distress
803 linked to their risk of becoming infected with COVID-19, quarantine and isolation, and being separated from their
804 families. The stress faced by healthcare workers should be cause for concern among our public health organizations,
805 as stress has serious health consequences for healthcare workers. We plan to investigate if the use of the mobile
806 exercise apps from Down Dog, provided free to participants, can significantly increase physical activity, and
807 improve the mental health and wellbeing of participants. Down Dog provides a variety of exercise apps appropriate
808 for home workouts, like high intensity interval training and yoga, or in neighbourhoods, like jogging.

809

810 WHO CAN PARTICIPATE?

811 To participate, you must be pre-retirement, and free of major health problems that may limit your ability to exercise.
812 You must currently be participating in no or very little physical activity (less than 150 minutes of moderate activity
813 per week). You must also be employed at one of the PHC centres.

814

815 WHO SHOULD NOT PARTICIPATE IN THE STUDY?

- 816 • Individuals cannot participate in the study if they have a medical history or a current medical condition
817 affecting their heart, lungs, or capacity to exercise. If for any reason you are unable to perform high-
818 intensity or strenuous exercise, you should not participate in this study.

819

- 820 • Individuals already engaging in regular exercise on a daily or almost daily basis cannot participate.
- 821 • Individuals who are retired are not eligible to participate.
- 822 • Individuals who have access to internet and mobile phone, tablet, or computer.
- 823 • Finally, if an individual is a non-English language speaker, unable to understand the risks that may be
- 824 associated with participating in this study, or who may not be able to adequately understand the
- 825 questionnaires that they will be asked to complete, they will be excluded from this study as well.

826

827 WHAT WILL I BE ASKED TO DO IN THE STUDY?

828 Overview of the study

829 As described above, our goal is to assess if the use of home-based workout apps will significantly increase physical
830 activity and improve the wellbeing and health of healthcare workers.

831

832 Regular physical activity can significantly improve symptoms of mental health disorders, such as depression and
833 anxiety, and increase our sense of control and experience of positive emotions. Becoming or staying physically
834 active during the COVID-19 pandemic is going to be a challenge for many people, including those who are not
835 already physically active. We are investigating how access to a suite of mobile physical activity apps that provide
836 opportunities to complete yoga, weight high-intensity interval training (HIIT), running, and barre with no need for
837 equipment will affect the wellbeing and health of healthcare workers during the COVID-19 pandemic.

838

839 If you decide to join this study: specific procedures

840 This study takes place in your own home or wherever you choose to complete your workouts. Approximately 560
841 participants from any of the 10 Providence Health Care centres will be enrolled in this study. The participants will
842 be randomized into one of two groups: (1) exercise group or (2) waitlist control group. If you are randomized into
843 the exercise group, you will be given a free one-year membership to the suite of workout apps offered by Down
844 Dog. You will be asked to complete a minimum of 4 workouts, each approximately 20 minutes in duration, per
845 week for 12 weeks. Those randomized to the waitlist control group will be asked to maintain their current levels of
846 activity and will be provided free access to the suite of apps after 12 weeks have passed. Every two weeks, for 12
847 weeks, you will also receive a survey to fill out, regardless of your assigned group.

848

849 If you agree to take part in this study, you can expect the duration of the study to be as follows:

850 Initial telephone screening and consent:

- 851 • After signing up for the study, a member of the research team will call you for an initial telephone
852 screening to ensure that you are eligible.
- 853 • If you are eligible for the study, we will review the entire study with you and go over the consent form.

854 Notes:

- 855 • If you wish to review the study with friends, family, or your doctor/nurse practitioner before deciding to
856 participate, you will be given time to do so. If you then wish to participate, we will set up a second
857 telephone call to complete consent.

858

859 Baseline questionnaire and randomization:

- 860 • If you consent to participate, you will be directed to a website to complete the survey about your current
861 state of wellbeing and health.
- 862 • In a similar manner to flipping a coin, you will then be randomly assigned to one of two groups: (1)
863 exercise group or (2) waitlist group.

864 Weeks 1 – 12:

865 (1) Exercise group:

- 866 • For the duration of the study, you will be completing any of the physical activities customizable within the
867 Down Dog apps. You will be asked to complete a minimum of four 20-minute workouts per week.
- 868 • Research staff will set up a study email address for you and your account on the Down Dog site, to ensure
869 your anonymity throughout the study and allow us to download your weekly exercise data for the purposes
870 of the study. We will also guide you through how to download and use the suite of apps to your mobile
871 devices or tablets.
- 872 • Every two weeks, you will receive a survey to complete.

873

874 (2) Waitlist group:

- 875 • For the 12 weeks of the study, you will be asked to continue your typical, pre-study daily and weekly
- 876 routine, maintaining the physical activity you were completing before the start of the study.
- 877 • At the end of the 12-week study, you will get access to the Down Dog apps to complete any of the offered
- 878 physical activities. Your membership will also be free for one year.
- 879 • Every two weeks, you will receive a survey to complete.

880 Individual interviews at week 12:

- 881 • If you are randomized to the exercise group, you may be invited to participate in the post-intervention
- 882 individual interview in Week 12. You will be asked to commit 30-90 minutes to an online or in-person
- 883 discussion with one of our research assistants to discuss your use of the apps and participation in the study.

884

885 Weeks 12-24:

886 (1) Exercise group:

- 887 • You have an additional 9 months of access to the Down Dog app that you may use as you wish.
- 888 • At week 24 (12 weeks after your initial 12-week participation in the study), you will receive a check-in
- 889 email with the final survey to complete.
- 890 • We will also record your use of the apps at week 24.

891

892 (2) Waitlist group:

- 893 • You will receive a free one-year membership to the suite of Down Dog apps to use as you wish at the end
- 894 of the first 12 weeks. We will set up your accounts for you, so that we can monitor your workouts on a
- 895 weekly basis.
- 896 • At the end of the first 12 weeks that you have access to the suite of apps (i.e., 24 weeks following your
- 897 randomization to the waitlist control group), you will receive a check-in email with the final survey to
- 898 complete.

899 Focus groups at week 24:

900 A random group of participants will be invited to participate in a series of focus group discussions, where we will

901 present our results from the individual interviews to get your feedback. If invited, you will be asked to commit 90-

902 120 minutes to these discussions.

903

904 WHAT ARE MY RESPONSIBILITIES?

905 Each week we would like those in the exercise group to complete at least 4 Down Dog workouts, so you will need to

906 plan your weeks to fit in these workouts. As these are at-home, unsupervised workouts, ensure that you have eaten

907 within a couple hours of exercise, and that your environment is relatively distraction free and safe. Please

908 discontinue exercise and contact the research team if you are concerned about your ability to complete the program.

909 If you are in the control group, we ask that you maintain your pre-study activity levels until week 13, when you will

910 be given access and instructions for use of the suite of Down Dog apps. Regardless of which group you are in, you

911 will be asked to fill out surveys every two weeks during the 12 week study, and we require these to be as accurate

912 and timely as possible. At week 12, for the exercise group, a research assistant will contact you to see if you want to

913 participate in the individual interviews and/or focus group discussions. The purpose of the individual interview and

914 the focus group discussions is to gather information about your likes and dislikes about physical activity, what

915 motivates you, and what barriers you may have faced to engage in physical activity.

916

917 WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

918 There is no guarantee that the study will benefit you. However, there is strong evidence that physical activity not

919 only improves our physical health, but also our mental health, symptoms of mood disorders, positive emotions, and

920 our sense of control. Regular physical activity can also reduce the risk of developing a mental illness, such as

921 depression or anxiety. There have already been reports of how the pandemic is having negative impacts on mental

922 health, and so this physical activity intervention may potentially improve your mental health and wellbeing during

923 the COVID-19 pandemic. Additionally, you will receive a free one-year membership to the Down Dog app which

924 provides many home workout activities with customizable options. Apart from the free one-year membership to

925 Down Dog, for each completed questionnaire, participants in both exercise and waitlist control groups will be added

926 to a draw (for a maximum of 8 entries) for the chance to win 1 of 2 Apple Watches or 1 of 20 \$100 gift cards. The

927 draw will occur at the end of the 24 weeks of the final participant participating in the study. Also, participants will

928 be compensated \$35 for their participation in the individual interview or focus group discussion.

929

930 WHAT ARE POTENTIAL RISKS OF PARTICIPATING IN THE STUDY?

931 The main risks of this exercise intervention are that of normal moderate-to-vigorous intensity exercise. Exercise has
 932 normal and common side effects, particularly when you are new to physical activity; during the exercise session you
 933 can expect some shortness of breath, muscle soreness/discomfort, and potential shakiness, especially if you have not
 934 eaten before the exercise session. Afterwards, it is normal for some muscle stiffness and soreness, joint stiffness, and
 935 tiredness to occur. Exercise carries the risk of injury, including fractures, muscle strains, sprains, skin lesions, and
 936 tissue inflammation. Ensuring a good warm-up, keeping your exercise environment distraction- and object-free, and
 937 not overtraining may reduce the risk of these injuries significantly. There is also a very small chance of a cardio-
 938 pulmonary event, like a heart attack, but our health questionnaires are designed to exclude anyone with a health
 939 condition that could increase their risk of an exercise-induced cardio-pulmonary issue.

940

941 WHEN DO I NEED TO BE CONCERNED ABOUT SIDE EFFECTS DURING OR POST-EXERCISE?

- 942 • Muscle soreness (can feel like an ache, typically dull) is normal during and after exercise, and can continue
 943 for up to two weeks, especially if you are new to exercise. However, if persistent or intense muscle pain
 944 (can feel sharp, “stabby”, movement limiting) starts during or right after a workout, discontinue exercise
 945 and contact your doctor and the research team.
- 946 • Muscle soreness that persists for longer than three weeks should be addressed. Reduce exercise and contact
 947 your doctor and a member of the research team.
- 948 • If shortness of breath continues for more than a few hours after exercise or occurs with upper chest pain or
 949 dizziness, discontinue exercise immediately and immediately contact your doctor and the research team.

950

951 CAN I WITHDRAW FROM THE STUDY ONCE I BEGIN?

952 Your participation in this research is entirely voluntary. You may withdraw from this study at any time without
 953 giving reasons. If you choose to enter the study and then decide to withdraw at a later time, you have the right to
 954 request the withdrawal of your information and survey responses collected during the study. This request will be
 955 respected to the extent possible. Please note however that there may be exceptions where the data will not be able to
 956 be withdrawn, for example where the data are no longer identifiable (meaning they cannot be linked in any way
 957 back to your identity) or where the questionnaire data has been merged with other data. If you would like to request
 958 the withdrawal of your data and samples, please let the research team know.

959

960 WILL MY TAKING PART IN THIS STUDY BE KEPT CONFIDENTIAL?

961 Your confidentiality will be respected. No information or records that disclose your identity will be published
 962 without your consent, nor will any information or records that disclose your identity be removed or released without
 963 your consent unless required by law.

964

965 You will be assigned a unique study number as a participant in this study. This number will not include any personal
 966 information that could identify you (e.g., it will not include your Personal Health Number, SIN, or your initials,
 967 etc.). Only this number will be used on any research-related information collected about you during the course of
 968 this study, so that your identity will be kept confidential. As we are registering participants using their study email,
 969 the Down Dog app will also not have any of your personal information. Information that contains your identity will
 970 remain only with the Principal Investigator and/or designate. The list that matches your name to the unique study
 971 number that is used on your research-related information will not be removed or released without your consent
 972 unless required by law. Also, all data will be encrypted. A description of this clinical trial will be available on
 973 <http://osf.io> and clinicaltrials.gov. This website will not include information that can identify you. At most, the
 974 website will include a summary of the results. You can search this website at any time.

975

976 Your rights to privacy are legally protected by federal and provincial laws that require safeguards to ensure that your
 977 privacy is respected. You also have the legal right of access to the information about you that has been provided to
 978 the researcher and, if need be, an opportunity to correct any errors in this information.

979

980 Your de-identified research data may be published or deposited into a publicly accessible location at the time of
 981 publication. This data could include the data collected during the screening questionnaires, study surveys, and
 982 exercise information from the Down Dog app. At no time will identifying information, such as your name, birth
 983 date, or street address be included in such data. This means that other researchers may analyze the data for different
 984 reasons other than those described in this consent form. Once the data is made publicly available, you will not be

985 able to withdraw your data. The extent of the risk of you being identified through public data is unknown, but
 986 currently appears to be low.

987
 988 Finally, Providence Health Care leadership will have no access to information about who is participating in the
 989 study, and thus your participation remains anonymous to your employer.

990
 991 **WHOM CAN I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY?**

992 If you have any questions or desire further information about this study before or during participation, you can
 993 contact Dr. Gosselin Boucher by email at vincent.gosselinboucher@ubc.ca. You may also contact the Principal
 994 Investigator, Dr. Eli Puterman by email at eli.puterman@ubc.ca.

995
 996 **WHOM CAN I CONTACT IF I HAVE ANY CONCERNS OR COMPLAINTS ABOUT THE STUDY?**

997 If you have any concerns or complaints about your rights as a research participant and/or your experiences while
 998 participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at
 999 604-822-8598 or via e-mail at RSIL@ors.ubc.ca or call toll free at 1-877-822-8598. Please reference the study
 1000 number [H21-02612] when calling so the Complaint Line can better assist you.

1001
 1002 Investigating the effects of mobile app on the wellbeing and health of healthcare workers during the COVID-19
 1003 Pandemic

1004
 1005 COvid-19 Pandemic and Exercise for Healthcare workers (COPE HCW) Trial

1006 **SUBJECT CONSENT TO PARTICIPATE**

1007
 1008 The consent form is not a contract and as such the subject does not give up any legal rights by signing it.
 1009 By signing the form, you indicate that you have read, understood and appreciate the information concerning the
 1010 study.

- 1011 • I have read and understood the subject information and consent form.
- 1012 • I have had sufficient time to consider the information provided and to ask for advice if necessary.
- 1013 • I have had the opportunity to ask questions and have had satisfactory responses to my questions.
- 1014 • I authorize access to my information and data as described in this consent form.
- 1015 • I understand that all of the information collected will be kept confidential and that the results will only be
 1016 used for scientific objectives.
- 1017 • I understand that my participation in this study is voluntary and that I am completely free to refuse to
 1018 participate or to withdraw from this study at any time without changing in any way the quality of care that I
 1019 receive.
- 1020 • I understand that there is no guarantee that this study will provide any benefits to me.
- 1021 • I have read this form and I freely consent to participate in this study.
- 1022 • I will receive a dated and signed copy of this form.

1023
 1024 **SIGNATURES**

1025 By signing this form, you do not give up any of your legal rights and you do not release the study investigators,
 1026 participating institutions, or anyone else from their legal and professional duties. If you become ill or physically
 1027 injured as a result of participation in this study, medical treatment will be provided at no additional cost to you. The
 1028 costs of your medical treatment will be paid by your provincial medical plan.

1029
 1030
 1031

1032 _____
 Subject name

 Signature

 Date

1033

1034 **12.2 Baseline survey**1035 **Questionnaire Baseline COPE HCW**

1036

1037

1038 Questionnaire Instructions

1039

1040 Please begin this questionnaire by reading all of the instructions thoroughly, and then answer the questions to the
1041 best of your knowledge. If you choose not to answer any question, just leave it blank and move on to the next
1042 question. Please note that some of the questions may appear redundant. This is done for an important reason that
1043 has to do with the reliability and validity of our questionnaire. Therefore, it is important that you answer as many
1044 questions as you can, even if they seem like they are asking the same thing. We need the most complete information
1045 possible to include your input into our results. Thank you for participating in this study! If you have any questions
1046 about completing the questionnaire, please feel free to ask the researcher for any additional help that you may
1047 require.

1048

1049

1050

1051 **Health Scales**
1052

1053 **Physical Health**

1054 **Item Text:** For **the past two weeks**, would you say your PHYSICAL HEALTH is excellent, very good, good, fair,
1055 or poor?

1056
1057 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1058
1059 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1060
1061 **Reference:** NA – but frequently used in Statistics Canada surveys

1062
1063

1064 **Mental Health**

1065 **Item Text:** For **the past two weeks**, would you say your MENTAL OR EMOTIONAL HEALTH is excellent, very
1066 good, good, fair, or poor?

1067
1068 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1069
1070 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1071
1072 **Reference:** NA – but frequently used in Statistics Canada surveys

1073
1074
1075

1076 **Stress**

1077 **Item Text:** Thinking about the amount of stress in your life for **the past two weeks**, would you say that most days
1078 are:

1079
1080 **Response Options:** not at all stressful, not very stressful, a bit stressful, quite a bit stressful, and extremely stressful

1081
1082 **Scoring:** Scores were converted to numeric with 1 = not at all stressful and 5 = extremely stressful

1083
1084 **Reference:** NA – but frequently used in Statistics Canada surveys

1085
1086
1087

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1095

1096

1097 **Sleep Quality**

1098

1099 **Item Text:** During the past two weeks, how would you rate your sleep quality overall?

1100

1101 **Response Options:** Very good, Fairly good, Fairly bad, Very bad

1102

1103 **Scoring:** Scores were converted to numeric with 1 = very good and 4 = very bad

1104

1105 **Reference:** Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry research*, 28(2), 193-213.1106 https://www.sleep.pitt.edu/wp-content/uploads/Study_Instruments_Measures/PSQI-Instrument.pdf

1107

1108

1109

1110 **Psychological Scales**

1111

1112 **Flourishing**

1113

1114 **Item Text:**

1115

1116 Below are 8 statements with which you may agree or disagree about how you have been feeling **during your past two weeks**. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

1117

1118

1119

1120

1. I lead a purposeful and meaningful life.
2. My social relationships are supportive and rewarding
3. I am engaged and interested in my daily activities
4. I actively contribute to the happiness and well-being of others
5. I am competent and capable in the activities that are important to me
6. I am a good person and live a good life
7. I am optimistic about my future
8. People respect me

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1130 **Response Options:** Strongly disagree, Somewhat disagree, A little disagree, Neither agree nor disagree, A little agree, Somewhat agree, and Strongly agree

1131

1132

1133

1132 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score of all items.

1134

1135

1136

1137

1138

1135 **Reference:** Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social indicators research*, 97(2), 143-156

1139 **Depression**

1140

1141 **Item Text:**

1142

1143 Below is a list of the ways you might have felt or behaved. Please tell us how often you have felt this way **during**
 1144 **the past two weeks.**

1145

1146 1. I was bothered by things that usually don't bother me.

1147 2. I had trouble keeping my mind on what I was doing.

1148 3. I felt depressed.

1149 4. I felt that everything I did was an effort.

1150 5. I felt hopeful about the future.*

1151 6. I felt fearful.

1152 7. My sleep was restless.

1153 8. I was happy.*

1154 9. I felt lonely.

1155 10. I could not get "going."

1156

1157 **Response Options:** Rarely or none of the time (less than 1 day), Some or a little of the time (1-2 days),

1158 Occasionally or a moderate amount of time (3-4 days), Most or all of the time (5-7 days)

1159

1160 **Scoring:** Each item is scored with 0 = Rarely or none of the time and 3 = Most or all of the time. Scale is scored

1161 with the sum score of all items. Note: items 5 and 8 are reverse-coded.

1162

1163 **Reference:** Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in
 1164 well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine*, 10(2), 77-84.

1165

1166 **Resilience**

1167

1168 **Item Text:**

1169

1170 Please respond to each item by marking one box per row. Please respond for **the past two weeks.**

1171

1172 1. I tend to bounce back quickly after hard times

1173 2. I have a hard time making it through stressful events*

1174 3. It does not take me long to recover from a stressful event

1175 4. It is hard for me to snap back when something bad happens*

1176 5. I usually come through difficult times with little trouble

1177 6. I tend to take a long time to get over set-backs in my life*

1178

1179 **Response Options:** Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1180

1181 **Scoring:** Each item is scored with 1 = Strongly Disagree and 5 = Strongly Agree. Scale is scored with the sum score

1182 of all items. Note: items 2, 4, and 6 are reverse-coded.

1183

1184 **Reference:** Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief
 1185 resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine*, 15(3), 194-200

1186

1187

1188 **Life Satisfaction**

1189

1190 **Item Text:** Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your
 1191 agreement for the **past two weeks** with each item. Please be open and honest in your responding.

1192

- 1193 1. In most ways my life is close to my ideal
 1194 2. The conditions of my life are excellent
 1195 3. I am satisfied with my life
 1196 4. So far I have gotten the important things I want in life
 1197 5. If I could live my life over, I would change almost nothing

1198

1199 **Response Options:** Strongly agree, Agree, Slightly agree, Neither agree nor disagree, Slightly disagree, Disagree,
 1200 Strongly disagree

1201

1202 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
 1203 of all items.

1204

1205 **Reference:** Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal*
 1206 *of Personality Assessment*, 49, 71-75.

1207

1208 **Burnout Questionnaire**

1209

1210 **Item Text:** On the following pages are statements of job-related feelings. Please read each statement carefully and
 1211 decide if you ever felt this way about your job over **the past two weeks**. If you have never had this feeling, select
 1212 the Never option. If you have had this feeling, indicate how often you felt it by selecting the option that best
 1213 describes how frequently you felt that way.

1214

1215 Items: the scale is proprietary and requires usage rights.

1216

1217 **Response Options:** Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A
 1218 few times a week, Every day.

1219

1220 **Scoring:** Each item is scored with 0 = Never and 6 = Every day. Scale is divided in 3 score: exhaustion (sum item's
 1221 score 1, 2, 3, 4, 6); cynicism (sum item's score 8, 9, 13, 14, 15); and professional efficacy (sum item's score 5, 7, 10,
 1222 11, 12, 16).

1223

1224 **Reference:** Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W.B., Schwab, R.L. (2018). *Maslach Burnout*
 1225 *Inventory: Fourth edition*. Published by Mind Garden, Inc.

1226

1227 **Spillover questionnaire**1228 **Item Text:** Please use the scale below to answer the next set of questions, thinking about **the past 2 weeks**.

1229

- 1230 1. My work schedule makes it difficult to fulfill personal responsibilities.
 1231 2. Because of my job, I don't have the energy to do things with my family or other important people in my
 1232 life.
 1233 3. Job worries or problems distract me when I am not at work
 1234 4. My work leaves me enough time to attend to my personal responsibilities.
 1235 5. My work gives me energy to do things with my family and other important people in my life.
 1236 6. Because of my job, I am in a better mood at home.

1237

1238 **Response Options:** Rarely, Sometimes, Often, Most of the time

1239

1240 **Scoring:** Each item is scored with 1 = Rarely and 4 = Most of the time. Subscale: Work-to-family enrichment: Sum
 1241 of score for items 4, 5, 6; Work-to-family conflict: Sum of score for items 1, 2, 3;

1242

1243 **Reference:** https://hrs.isr.umich.edu/sites/default/files/meta/2020/core/qnaire/online/2020_SAQ_v13.pdf1244 Cho, E., & Chen, T.-Y. (2018). The effects of work family experiences on health among older
 1245 workers. *Psychology and Aging*, 33(7), 993-1006. doi:10.1037/pag0000293

1246

1247 **Physical Health**

1248

1249 **Physical Health Symptoms**

1250

1251 **Item Text:**

1252

1253 **In the past two weeks**, have you experienced any of the following symptoms:

1254

- 1255 1. None
 1256 2. Diarrhea/constipation / other stomach problems
 1257 3. Headache
 1258 4. Backache
 1259 5. Muscle soreness
 1260 6. Fatigue
 1261 7. Joint pain
 1262 8. Muscle weakness
 1263 9. Cough
 1264 10. Sore throat
 1265 11. Fever
 1266 12. Chills
 1267 13. Other cold and flu symptoms
 1267 14. Nausea

1268 **Response Options:** A check box was provided for each option in which participants could select it or leave it blank

1269

1270 **Scoring:** Each Symptom was binary coded as an individual variable in which 1 represents the presence of the
 1271 symptom and 0 represented the absence.

1272

1273

1274 **Chronic Conditions**

1275

1276 **Item Text:**

1277

1278 **In the past year**, have you experienced or been treated for any of the following:

1279

- Asthma, bronchitis, or emphysema
- Tuberculosis
- Other lung problems
- Arthritis, rheumatism, or other bone or joint diseases
- Sciatica, lumbago, or recurring backache
- Persistent skin trouble (e.g., eczema)
- Thyroid disease
- Hay fever
- Recurring stomach trouble, indigestion, or diarrhea
- Urinary or bladder problems
- Being constipated all or most of the time
- Gall bladder trouble
- Persistent foot trouble (e.g., bunions, ingrown toenails)
- Trouble with varicose veins requiring medical treatment
- AIDS or HIV infection
- Lupus or other autoimmune disorders
- Persistent trouble with your gums or mouth
- Persistent trouble with your teeth
- High blood pressure or hypertension
- Anxiety, depression, or some other emotional disorder
- Alcohol or drug problems
- Migraine headaches
- Chronic sleeping problems
- Diabetes or high blood sugar
- Multiple sclerosis, epilepsy, or other neurological disorders
- Stroke
- Ulcer
- Hernia or rupture
- Piles or hemorrhoids
- Swallowing Problems

1280

1281 **Response Options:** A check box was provided for each option in which participants could select it or leave it blank

1282

1283 **Scoring:** Each Chronic Condition was binary coded as an individual variable in which 1 represents the presence of the condition and 0 represented the absence.

1284

1285

1286 **Health Behaviours**

1287

1288 **Leisure Time Physical Activity**

1289

1290 **Item Text:**

1291

1292 **Number of Times**

1293 Considering the **past 7-day period** (last week), how many times on average did you do STRENUOUS EXERCISE
 1294 for **more than 15 minutes** during your **free time**, not including your time with the Apps provided to you in the
 1295 study (if you are in the exercise group)?

1296

1297 STRENUOUS EXERCISE (HEART BEATING RAPIDLY; i.e. running, jogging, hockey, football, soccer, squash,
 1298 basketball, netball, judo, vigorous swimming, vigorous long distance bicycling)

1299

1300 MODERATE EXERCISE (NOT EXHAUSTING; i.e. fast walking, baseball, tennis, easy bicycling, volleyball,
 1301 badminton, easy swimming, alpine skiing, popular and folk dancing.)

1302

1303 MILD EXERCISE (MINIMAL EFFORT; i.e. yoga, archery, fishing from river bank, bowling, horseshoes, golf,
 1304 snow-mobiling, easy walking.)

1305

1306 **Length of Session**

1307 Considering the **past 7-day period** (last week), how **many minutes was each** STRENUOUS intensity exercise
 1308 session (approximately), not including your time with the Apps provided to you in the study (if you are in the
 1309 exercise group)?

1310

1311 **Response Options:** For each of strenuous, moderate and mild exercise, participants reported the number of times (0-
 1312 90). If they reported one or more sessions, they were asked about length of session (drop down menu with hours,
 1313 minutes).

1314

1315 **Reference:** Shephard, R. (1997). Godin leisure-time exercise questionnaire. *Medicine & Science in Sports &*
 1316 *Exercise*, 29(6), S36-S38.

1317

1318 **Perceived Variety of Exercise**

1319 **Item Text:** Please answer the following questions by considering how you've felt **during the past two weeks** while
 1320 you were exercising.

1321

- 1322 1. I felt like I engage in a variety of exercises.
- 1323 2. I felt like I try a range of exercises.
- 1324 3. I felt like I change the types of exercise that I do.
- 1325 4. I felt like my exercise program is varied.
- 1326 5. I felt like I experience variety in my exercise.

1327

1328 **Response Options:** False, mostly false, more false than true, more true than false, mostly true, and true

1329

1330 **Scoring:** Each item is scored with 1 = False and 6 = True. Scale is scored with the sum score of all items.

1331

1332 **Reference:** Sylvester, B. D., Standage, M., Ark, T. K., Sweet, S. N., Crocker, P. R., Zumbo, B. D., & Beauchamp,
 1333 M. R. (2014). Is variety a spice of (an active) life?: perceived variety, exercise behavior, and the mediating role of
 1334 autonomous motivation. *Journal of Sport and Exercise Psychology*, 36(5), 516-527.

1335

1336

1337

1338 **Alcohol Habits**

1339

1340 **Item Text:**

1341

1342 ***Any Drinking***

1343 During **the past weeks**, have you had at least one drink of any alcoholic beverage such as beer, wine, wine coolers,
1344 or liquor?

1345

1346 ***Frequency of Drinking***

1347 During **the past weeks**, how often did you drink any alcoholic beverages, on the average?

1348

1349 ***Amount of Alcohol Consumed***

1350 On the days when you drank, about how many drinks did you drink on the average? ("By one 'drink', we mean either
1351 a bottle of beer, a wine cooler, a glass of wine, a shot of liquor, or a mixed drink.")

1352

1353 **Response Options:**

1354

1355 ***Any Drinking***

1356 Yes / No

1357

1358 ***Frequency of Drinking***

1359 1 or 2 days a week, 3 or 4 days a week, 5 or 6 days a week, everyday

1360

1361 ***Amount of Alcohol Consumed***

1362 (numeric response)

1363

1364 **Current Smoking Status**

1365

1366 **Item Text:** Do you smoke cigarettes regularly NOW?

1367

1368 **Response Options:** Yes / No

1369

1370 **Scoring:** Yes = 1, No = 0

1371

1372

1373 **Smoking History**

1374

1375 **Item Text:** Have you ever smoked cigarettes regularly -- that is, at least a few cigarettes every day?

1376

1377 **Response Options:** Yes / No

1378

1379 **Scoring:** Yes = 1, No = 0

1380

1381

1382

1383 **Demographics**

1384

1385 **Sex**

1386

1387 **Item Text:** What sex were you assigned at birth, meaning on your original birth certificate?

1388

1389 **Response Options:** Male, Female, Intersex, Prefer not to answer

1390

1391 **Scoring:** Female = 1, Male = 0, Prefer not to answer = NA

1392

1393

1394 **Gender**

1395

1396 **Item Text:** What is your gender identity?

1397

1398 **Response Options:** Woman, Man, Non-binary person, Prefer not to answer

1399

1400

1401 **Gender experience**

1402 **Item Text:** Do you have lived experience as a trans person (meaning your gender identity does not align with your gender assigned at birth)?

1403

1404

1405 **Response Options:** Yes / No, Prefer not to answer

1406

1407

1408 **Indigenous Identity**

1409 **Item Text:** Do you identify as Indigenous - that is First Nations (North American Indian), Métis, or Inuit?

1410

1411 **Response Options:** Yes / No , Prefer not to answer

1412

1413

1414 **Disability**

1415 **Item Text:** Are you person with a disability?

1416

1417 **Response Options:** Yes / No, Prefer not to answer

1418

1419

1420

1421

1422

1423

1424

1425

1426

1427

1428

1429

1430

1431 **Visible Minority**

1432

1433 **Item Text:** Do you identify as a member of a visible minority in Canada?1434 **Response Options:** Yes / No, Prefer not to answer

1435 Cultural Background

1436

1437 **Item Text:** People living in Canada come from different cultural and racial backgrounds. Please read all the categories and select all that apply

1438

1439

1440 **Response Options:**

1441

1442 Aboriginal decent (e.g., North American Indian, Métis, or Inuit (Eskimo));1443 White;1444 Chinese;1445 South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc...);1446 Black (e.g., African, Haitian, Jamaican, Somali, etc...);1447 Filipino;1448 Latin American;1449 South East Asian (e.g., Vietnamese, Cambodian, Malaysian, Laotian, etc...);1450 Arab;1451 West Asian (e.g., Iranian, Afghan, etc...);1452 Korean;1453 Japanese;1454 Other - please specify

1455

1456

1457 **Sexual Orientation**1458 **Item Text:** Do you identify as gay, lesbian, bisexual, or queer?

1459

1460 **Response Options:** Yes / No, Prefer not to answer

1461

1462

1463 **Marital Status**

1464

1465 **Item Text:** What is your marital status?

1466

1467 **Response Options:** Married; Living common-law; Widowed; Separated; Divorced; Single, never married, prefer not to answer

1468

1469 **Scoring:** Dummy coded as married (Married; Living common-law), no longer married (Widowed; Separated;

1470 Divorced), Single (Single, never married)

1471

1472

1473

1474 **Age**

1475

1476

1477 **Item Text:** Please enter your age

1478

1479 **Response Options:** Numerical response between 0 and 99

1480

1481

1482 **Postal Code**

1483

1484 **Item Text:** What are the first 3 characters of your postal code?

1485

1486 **Response Options:** Text entry

1487

1488 **Education**1489 **Item Text:** Enter your highest level of education

1490

1491 **Response Options:**

1492

1493

- Less than high school diploma or its equivalent

1494

- High school diploma or a high school equivalency certificate

1495

- Trade certificate or diploma

1496

- College, CEGEP, or other non-university certificate or diploma (other than trades certificates or diplomas)

1497

- University certificate or diploma below the bachelor's level

1498

- Bachelor's degree (e.g., B.A., B.Sc., LL.B.)

1499

- University certificate, diploma, degree above the bachelor's level

1500

- Prefer not to answer

1501

1502 **Income**

1503

1504 **Item Text:**

1505

1506 What is your best estimate of your **total household income** received by all household members, from all sources,
1507 before taxes and deductions, during the year ending December 31, 2021

1508

1509 Income can come from various sources such as from work, investments, pensions, or government. Examples include
1510 Employment Insurance, Social Assistance, Child Tax Benefit, and other income such as child support, spousal
1511 support (alimony), and rental income.

1512

1513 **Response Options:**

1514

-
- | | | |
|--------------------|---------------------|-------------------------------------|
| • 0 or less than 0 | • 80,001 - 90,000 | • 170,001 - 180,000 |
| • 1 - 10,000 | • 90,001 - 100,000 | • 180,001 - 190,000 |
| • 10,001 - 20,000 | • 100,001 - 110,000 | • 190,001 - 200,000 |
| • 20,001 - 30,000 | • 110,001 - 120,000 | • 200,001 - 210,000 |
| • 30,001 - 40,000 | • 120,001 - 130,000 | • 210,001 - 220,000 |
| • 40,001 - 50,000 | • 130,001 - 140,000 | • 220,001 - 230,000 |
| • 50,001 - 60,000 | • 140,001 - 150,000 | • 230,001 - 240,000 |
| • 60,001 - 70,000 | • 150,001 - 160,000 | • 240,001 - 250,000 |
| • 70,001 - 80,000 | • 160,001 - 170,000 | • 250,001+ |
| | | • Do not know/ prefer not to answer |
-

1515 **Current Living Situation**

1516

1517 **Item Text:** What is your current living situation?

1518

1519 **Response Options:** Living alone, Living with others, prefer not to answer

1520

1521 **Scoring:** Living with others = 1, Living alone = 0

1522

1523

1524 **Current Living Situation (With Others)**

1525

1526 **Item Text:** [branched option for those who indicate that they are living with others]

1527

1528 You indicated that you are currently living with others. Please check all that apply.

1529

1530 **Response Options:**

1531

1532 • spouse/partner,

1533 • parent(s),

1534 • child(ren),

1535 • friend(s), roommate(s)

1536 • Other (please specify)

1537 _____

1538

1539 **Work situation**

1540 **Type of healthcare worker**

1541

1542 **Item Text:** Which job title do you hold at one of the Providence Health Care centres?

1543

1544 **Response Options:**

1545

1546 Nurse Practitioner

1547 Registered Nurse

1548 Registered Psychiatric Nurse

1549 Licensed Practical Nurse

1550 Physician / Surgeon

1551 Psychologist

1552 Social Worker

1553 Spiritual Care Practitioner

1554 Occupational Therapist

1555 Physical Therapist

1556 Respiratory Therapist

1557 Pharmacist

1558 Dietitian

1559 Care Aide

1560 Porter/Ward Aide

1561 Midwife

1562 Speech Language Pathologist

1563 Unit Coordinator

1564 Administrative Staff

1565 Other

1566

1567 **Scoring:** Single selection. Those who selected other were offered a textbox

1568 **Providence Health Care Centre**

1569

1570 **Item Text:** In which providence health care centre do you primarily work?

1571

1572 **Response Options:**

1573

1574

St. Paul's Hospital

1575

Mount Saint Joseph Hospital

1576

Holy Family Hospital

1577

Youville Residence

1578

St. Vincent's: Langara

1579

St. Vincent's: Honoria Conway-Heather

1580

St. Vincent's: Brock Fahrni

1581

St. John Hospice

1582

Providence Crosstown Clinic

1583

Community Dialysis Units

1584

1585 **Scoring:** Single selection.

1586

1587 **Current Employment Situation**

1588 **Item Text:** What about your current employment situation – **are you working now for pay, self-employed, looking for work, temporarily laid off, retired, a homemaker, a full-time or part-time student, etc.?**

1589

1590

1591 **Response Options:**

1592

1593

Working full-time

1594

Working part-time

1595

Full-time student

1596

Part-time student

1597

Maternity or sick leave (volunteered)

1598

Permanently disabled (volunteered)

1599

Other _____ (specify)

1600

Don't know/not sure

1601

Prefer not to say

1602

1603

1604

Scoring: Multiple selections were allowed. Those who selected other were offered a textbox.

1605

1606 **Absenteeism**

1607

Item Text: In the **past 2 weeks**, how many days did you call in sick when you were scheduled to work?

1608

1609

Response Options: Scroll down list of 0-14

1610

1611

1612 **Overtime**

1613

Item Text: In the **past 2 weeks**, how many overtime shifts did you work?

1614

1615

Response Options: Scroll down list of 0-14

1616

1617

1618 **Work hour and shift**1619 **Item Text:** In the **past 2 weeks**, what was your main work schedule?

1620

1621 **Response Options:**

1622

1623 Day 8-hour shifts1624 Night 8-hour shifts1625 Day 12-hour shifts1626 Night 12-hour shifts1627 Mixed day and night 8-hour shifts1628 Mixed day and night 12-hour shifts1629 Other _____ (specify)1630 Don't know/not sure1631 Prefer not to answer

1632

1633 **Scoring:** Multiple selections were allowed. Those who selected other were offered a textbox

1634

1635

1636

1637 **12.3 Biweekly survey**1638 **Biweekly questionnaire COPE HCW**

1639

1640

1641 Questionnaire Instructions

1642

1643 Please begin this questionnaire by reading all of the instructions thoroughly, and then answer the questions to the

1644 best of your knowledge. If you choose not to answer any question, just leave it blank and move on to the next

1645 question. Please note that some of the questions may appear redundant. This is done for an important reason that

1646 has to do with the reliability and validity of our questionnaire. Therefore, it is important that you answer as many

1647 questions as you can, even if they seem like they are asking the same thing. We need the most complete information

1648 possible to include your input into our results. Thank you for participating in this study! If you have any questions

1649 about completing the questionnaire, please feel free to ask the researcher for any additional help that you may

1650 require.

1651

1652

1653

1654 **Health Scales**
1655

1656 **Physical Health**

1657 **Item Text:** For the past two weeks, would you say your PHYSICAL HEALTH is excellent, very good, good, fair,
1658 or poor?

1659
1660 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1661
1662 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1663
1664 **Reference:** NA – but frequently used in Statistics Canada surveys

1665
1666

1667 **Mental Health**

1668 **Item Text:** For the past two weeks, would you say your MENTAL OR EMOTIONAL HEALTH is excellent, very
1669 good, good, fair, or poor?

1670
1671 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1672
1673 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1674
1675 **Reference:** NA – but frequently used in Statistics Canada surveys

1676
1677

1678

1679 **Stress**

1680 **Item Text:** Thinking about the amount of stress in your life for the past two weeks, would you say that most days
1681 are:

1682
1683 **Response Options:** not at all stressful, not very stressful, a bit stressful, quite a bit stressful, and extremely stressful

1684
1685 **Scoring:** Scores were converted to numeric with 1 = not at all stressful and 5 = extremely stressful

1686
1687 **Reference:** NA – but frequently used in Statistics Canada surveys

1688

1689

1690

1691 **Sleep Quality**

1692

1693 **Item Text:** During the past two weeks, how would you rate your sleep quality overall?

1694

1695 **Response Options:** Very good, Fairly good, Fairly bad, Very bad

1696

1697 **Scoring:** Scores were converted to numeric with 1 = very good and 4 = very bad

1698

1699 **Reference:** Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry research*, 28(2), 193-213.1700 https://www.sleep.pitt.edu/wp-content/uploads/Study_Instruments_Measures/PSQI-Instrument.pdf

1701

1702

1703 **Psychological Scales**1704 **Flourishing**

1705

1706 **Item Text:**

1707

1708 Below are 8 statements with which you may agree or disagree about how you have been feeling **during your past**
1709 **two weeks**. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each
1710 statement.

1711

1712 1. I lead a purposeful and meaningful life.

1713 2. My social relationships are supportive and rewarding

1714 3. I am engaged and interested in my daily activities

1715 4. I actively contribute to the happiness and well-being of others

1716 5. I am competent and capable in the activities that are important to me

1717 6. I am a good person and live a good life

1718 7. I am optimistic about my future

1719 8. People respect me

1720

1721 **Response Options:** Strongly disagree, Somewhat disagree, A little disagree, Neither agree nor disagree, A little
1722 agree, Somewhat agree, and Strongly agree

1723

1724 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
1725 of all items.

1726

1727 **Reference:** Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010).1728 New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social indicators*
1729 *research*, 97(2), 143-156

1730

1731 **Depression**

1732

1733 **Item Text:**

1734

1735 Below is a list of the ways you might have felt or behaved. Please tell us how often you have felt this way **during**
 1736 **the past two weeks.**

1737

1738 1.I was bothered by things that usually don't bother me.

1739 2.I had trouble keeping my mind on what I was doing.

1740 3.I felt depressed.

1741 4.I felt that everything I did was an effort.

1742 5.I felt hopeful about the future.*

1743 6.I felt fearful.

1744 7.My sleep was restless.

1745 8.I was happy.*

1746 9.I felt lonely.

1747 10.I could not get "going."

1748

1749 **Response Options:** Rarely or none of the time (less than 1 day), Some or a little of the time (1-2 days),

1750 Occasionally or a moderate amount of time (3-4 days), Most or all of the time (5-7 days)

1751

1752 **Scoring:** Each item is scored with 0 = Rarely or none of the time and 3 = Most or all of the time. Scale is scored
 1753 with the sum score of all items. Note: items 5 and 8 are reverse-coded.

1754

1755 **Reference:** Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in
 1756 well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine*, 10(2), 77-84.

1757

1758 **Resilience**

1759

1760 **Item Text:**

1761

1762 Please respond to each item by marking one box per row. Please respond for **the past two weeks.**

1763

1764 1.I tend to bounce back quickly after hard times

1765 2.I have a hard time making it through stressful events*

1766 3.It does not take me long to recover from a stressful event

1767 4.It is hard for me to snap back when something bad happens*

1768 5.I usually come through difficult times with little trouble

1769 6.I tend to take a long time to get over set-backs in my life*

1770

1771 **Response Options:** Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1772

1773 **Scoring:** Each item is scored with 1 = Strongly Disagree and 5 = Strongly Agree. Scale is scored with the sum score
 1774 of all items. Note: items 2, 4, and 6 are reverse-coded.

1775

1776 **Reference:** Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief
 1777 resilience scale: assessing the ability to bounce back. *International journal of behavioral medicine*, 15(3), 194-200

1778

1779 **Life Satisfaction**

1780

1781 **Item Text:** Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your
 1782 agreement for the **past two weeks** with each item. Please be open and honest in your responding.

1783

1784 1. In most ways my life is close to my ideal

1785 2. The conditions of my life are excellent

1786 3. I am satisfied with my life

1787 4. So far I have gotten the important things I want in life

1788 5. If I could live my life over, I would change almost nothing

1789 **Response Options:** Strongly agree, Agree, Slightly agree, Neither agree nor disagree, Slightly disagree, Disagree,
 1790 Strongly disagree

1791

1792 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
 1793 of all items.

1794

1795 **Reference:** Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal*
 1796 *of Personality Assessment*, 49, 71-75.

1797

1798 **Burnout Questionnaire**

1799

1800 **Item Text:**

1801

1802 On the following pages are statements of job-related feelings. Please read each statement carefully and decide if you
 1803 ever felt this way about your job over **the past two weeks**. If you have never had this feeling, select the Never
 1804 option. If you have had this feeling, indicate how often you felt it by selecting the option that best describes how
 1805 frequently you felt that way.

1806

1807 Items: the scale is proprietary and requires usage rights.

1808

1809 **Response Options:** Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A
 1810 few times a week, Every day.

1811

1812 **Scoring:** Each item is scored with 0 = Never and 6 = Every day. Scale is divided in 3 score: exhaustion (sum item's
 1813 score 1, 2, 3, 4, 6); cynicism (sum item's score 8, 9, 13, 14, 15); and professional efficacy (sum item's score 5, 7, 10,
 1814 11, 12, 16).

1815

1816 **Reference:** Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W.B., Schwab, R.L. (2018). *Maslach Burnout*
 1817 *Inventory: Fourth edition*. Published by Mind Garden, Inc.

1818

1819 **Spillover questionnaire**1820 **Item Text:**

1821

1822 Please use the scale below to answer the next set of questions, thinking about **the past 2 weeks**.

1823

1824 1. My work schedule makes it difficult to fulfill personal responsibilities.

1825 2. Because of my job, I don't have the energy to do things with my family or other important people in my life.

1826 3. Job worries or problems distract me when I am not at work

1827 4. My work leaves me enough time to attend to my personal responsibilities.

1828 5. My work gives me energy to do things with my family and other important people in my life.

1829 6. Because of my job, I am in a better mood at home.

1830

1831 **Response Options:** Rarely, Sometimes, Often, Most of the time

1832

1833 **Scoring:** Each item is scored with 1 = Rarely and 4 = Most of the time. Subscale: Work-to-family enrichment: Sum

1834 of score for items 4, 5, 6; Work-to-family conflict: Sum of score for items 1, 2, 3;

1835

1836 **Reference:** https://hrs.isr.umich.edu/sites/default/files/meta/2020/core/qnaire/online/2020_SAQ_v13.pdf

1837 Cho, E., & Chen, T.-Y. (2018). The effects of work family experiences on health among older

1838 workers. *Psychology and Aging*, 33(7), 993-1006. doi:10.1037/pag0000293

1839

1840 **Physical Health**

1841

1842 **Physical Health Symptoms**

1843

1844 **Item Text:**

1845

1846 **In the past two weeks**, have you experienced any of the following symptoms:

1847 1. None

1848 2. Diarrhea/constipation / other stomach problems

1849 3. Headache

1850 4. Backache

1851 5. Muscle soreness

1852 6. Fatigue

1853 7. Joint pain

1854 8. Muscle weakness

1855 9. Cough

1856 10. Sore throat

1857 11. Fever

1858 12. Chills

1859 13. Other cold and flu symptoms

1860 14. Nausea

1861 **Response Options:** A check box was provided for each option in which participants could select it or leave it blank

1862

1863 **Scoring:** Each Symptom was binary coded as an individual variable in which 1 represents the presence of the

1864 symptom and 0 represented the absence.

1865

1866 **Health Behaviours**1867 **Leisure Time Physical Activity**

1868

1869 **Item Text:**

1870

1871 ***Number of Times***

1872 Considering the **past 7-day period** (last week), how many times on average did you do STRENUOUS EXERCISE
 1873 for **more than 15 minutes** during your **free time**, not including your time with the Apps provided to you in the
 1874 study (if you are in the exercise group)?

1875

1876 STRENUOUS EXERCISE (HEART BEATING RAPIDLY; i.e. running, jogging, hockey, football, soccer, squash,
 1877 basketball, netball, judo, vigorous swimming, vigorous long distance bicycling)

1878

1879 MODERATE EXERCISE (NOT EXHAUSTING; i.e. fast walking, baseball, tennis, easy bicycling, volleyball,
 1880 badminton, easy swimming, alpine skiing, popular and folk dancing.)

1881

1882 MILD EXERCISE (MINIMAL EFFORT; i.e. yoga, archery, fishing from river bank, bowling, horseshoes, golf,
 1883 snow-mobiling, easy walking.)

1884

1885 ***Length of Session***

1886 Considering the **past 7-day period** (last week), how **many minutes was each** STRENUOUS intensity exercise
 1887 session (approximately), not including your time with the Apps provided to you in the study (if you are in the
 1888 exercise group)?

1889

1890 **Response Options:** For each of strenuous, moderate and mild exercise, participants reported the number of times (0-
 1891 90). If they reported one or more sessions, they were asked about length of session (drop down menu with hours,
 1892 minutes).

1893

1894 **Reference:** Shephard, R. (1997). Godin leisure-time exercise questionnaire. *Medicine & Science in Sports &*
 1895 *Exercise*, 29(6), S36-S38.

1896

1897 **Down Dog Items – Only for the Exercise Group**

1898

1899 **Item Text:**

1900

1901 1. In **the past two weeks**, did you complete any of your Down Dog workouts with anyone in your household?
 1902 2. [Branched option if participant indicated someone used Downdog with them] In **the past two weeks**, how
 many of the workouts were completed with another person?

1903

1904 3. Did anyone in your household use your Down Dog app without you?
 1905 4. [Branched option if participant indicated someone use Downdog without them] in **the past two weeks**,
 how many times did the person in your household use the app?

1906

1907 **Response Options:** Questions 1 & 3 were binary Yes / No items. Questions 2 & 4 were numerical text entry

1908

1909 **Scoring:** Not currently scored

1910

1911

1912 **Perceived Variety of Exercise**1913 **Item Text:**

1914

1915 Please answer the following questions by considering how you've felt **during the past two weeks** while you were
 1916 exercising.

1917

1918 1.I felt like I engage in a variety of exercises.

1919 2.I felt like I try a range of exercises.

1920 3.I felt like I change the types of exercise that I do.

1921 4.I felt like my exercise program is varied.

1922 5.I felt like I experience variety in my exercise.

1923

1924 **Response Options:** False, mostly false, more false than true, more true than false, mostly true, and true

1925

1926 **Scoring:** Each item is scored with 1 = False and 6 = True. Scale is scored with the sum score of all items.

1927

1928 **Reference:** Sylvester, B. D., Standage, M., Ark, T. K., Sweet, S. N., Crocker, P. R., Zumbo, B. D., & Beauchamp,
 1929 M. R. (2014). Is variety a spice of (an active) life?: perceived variety, exercise behavior, and the mediating role of
 1930 autonomous motivation. *Journal of Sport and Exercise Psychology*, 36(5), 516-527.

1931

1932 **Work situation**1933 **Absenteeism**

1934 **Item Text:** In the **past 2 weeks**, how many days did you call in sick when you were scheduled to work?

1935

1936 **Response Options:** Scroll down list of 0-14

1937

1938

1939 **Overtime**

1940 **Item Text:** In the **past 2 weeks**, how many overtime shifts did you work?

1941

1942 **Response Options:** Scroll down list of 0-14

1943

1944 **Work hour and shift**

1945 **Item Text:** In the **past 2 weeks**, what was your main work schedule?

1946

1947 **Response Options:**

1948

1949 Day 8-hour shifts

1950 Night 8-hour shifts

1951 Day 12-hour shifts

1952 Night 12-hour shifts

1953 Mixed day and night 8-hour shifts

1954 Mixed day and night 12-hour shifts

1955 Other _____ (specify)

1956 Don't know/not sure

1957 Prefer not to answer

1958

1959 **Scoring:** Multiple selections were allowed. Those who selected other were offered a textbox

1960

1961 12.4 Week 12 survey

1962
1963
1964
1965
1966
1967
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1972
1973
1974
1975
1976
1977

Week 12 questionnaire COPE HCW

Questionnaire Instructions

Please begin this questionnaire by reading all of the instructions thoroughly, and then answer the questions to the best of your knowledge. If you choose not to answer any question, just leave it blank and move on to the next question. Please note that some of the questions may appear redundant. This is done for an important reason that has to do with the reliability and validity of our questionnaire. Therefore, it is important that you answer as many questions as you can, even if they seem like they are asking the same thing. We need the most complete information possible to include your input into our results. Thank you for participating in this study! If you have any questions about completing the questionnaire, please feel free to ask the researcher for any additional help that you may require.

1978 **Health Scales**
1979

1980 **Physical Health**

1981 **Item Text:** For **the past two weeks**, would you say your PHYSICAL HEALTH is excellent, very good, good, fair,
1982 or poor?

1983

1984 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1985

1986 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1987

1988 **Reference:** NA – but frequently used in Statistics Canada surveys

1989

1990 **Mental Health**

1991 **Item Text:** For **the past two weeks**, would you say your MENTAL OR EMOTIONAL HEALTH is excellent, very
1992 good, good, fair, or poor?

1993

1994 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

1995

1996 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

1997

1998 **Reference:** NA – but frequently used in Statistics Canada surveys

1999

2000

2001 **Stress**

2002 **Item Text:** Thinking about the amount of stress in your life for **the past two weeks**, would you say that most days
2003 are:

2004

2005 **Response Options:** not at all stressful, not very stressful, a bit stressful, quite a bit stressful, and extremely stressful

2006

2007 **Scoring:** Scores were converted to numeric with 1 = not at all stressful and 5 = extremely stressful

2008

2009 **Reference:** NA – but frequently used in Statistics Canada surveys

2010

2011

2012

2013 **Sleep Quality**

2014

2015 **Item Text:** During the past two weeks, how would you rate your sleep quality overall?

2016

2017 **Response Options:** Very good, Fairly good, Fairly bad, Very bad

2018

2019 **Scoring:** Scores were converted to numeric with 1 = very good and 4 = very bad

2020

2021 **Reference:** Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry research*, 28(2), 193-213.2022 https://www.sleep.pitt.edu/wp-content/uploads/Study_Instruments_Measures/PSQI-Instrument.pdf

2023

2024

2025 **Psychological Scales**

2026

2027 **Flourishing**

2028

2029 **Item Text:**

2030

2031 Below are 8 statements with which you may agree or disagree about how you have been feeling **during your past**
2032 **two weeks**. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each
2033 statement.

2034

2035 1.I lead a purposeful and meaningful life.

2036 2.My social relationships are supportive and rewarding

2037 3.I am engaged and interested in my daily activities

2038 4.I actively contribute to the happiness and well-being of others

2039 5.I am competent and capable in the activities that are important to me

2040 6.I am a good person and live a good life

2041 7.I am optimistic about my future

2042 8.People respect me

2043

2044 **Response Options:** Strongly disagree, Somewhat disagree, A little disagree, Neither agree nor disagree, A little
2045 agree, Somewhat agree, and Strongly agree

2046

2047 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
2048 of all items.

2049

2050 **Reference:** Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010).2051 New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social indicators*
2052 *research*, 97(2), 143-156

2053

2054 **Depression**

2055

2056 **Item Text:**

2057

2058 Below is a list of the ways you might have felt or behaved. Please tell us how often you have felt this way **during**
 2059 **the past two weeks.**

2060

2061 1.I was bothered by things that usually don't bother me.

2062 2.I had trouble keeping my mind on what I was doing.

2063 3.I felt depressed.

2064 4.I felt that everything I did was an effort.

2065 5.I felt hopeful about the future.*

2066 6.I felt fearful.

2067 7.My sleep was restless.

2068 8.I was happy.*

2069 9.I felt lonely.

2070 10.I could not get "going."

2071

2072 **Response Options:** Rarely or none of the time (less than 1 day), Some or a little of the time (1-2 days),

2073 Occasionally or a moderate amount of time (3-4 days), Most or all of the time (5-7 days)

2074

2075 **Scoring:** Each item is scored with 0 = Rarely or none of the time and 3 = Most or all of the time. Scale is scored
 2076 with the sum score of all items. Note: items 5 and 8 are reverse-coded.

2077

2078 **Reference:** Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in
 2079 well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine*, 10(2), 77-84.

2080

2081 **Resilience**

2082

2083 **Item Text:**

2084

2085 Please respond to each item by marking one box per row. Please respond for **the past two weeks.**

2086

2087 1.I tend to bounce back quickly after hard times

2088 2.I have a hard time making it through stressful events*

2089 3.It does not take me long to recover from a stressful event

2090 4.It is hard for me to snap back when something bad happens*

2091 5.I usually come through difficult times with little trouble

2092 6.I tend to take a long time to get over set-backs in my life*

2093

2094 **Response Options:** Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

2095

2096 **Scoring:** Each item is scored with 1 = Strongly Disagree and 5 = Strongly Agree. Scale is scored with the sum score
 2097 of all items. Note: items 2, 4, and 6 are reverse-coded.

2098

2099 **Reference:** Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief
 2100 resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194-200

2101

2102 **Life Satisfaction**

2103

2104 **Item Text:** Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your
2105 agreement for the **past two weeks** with each item. Please be open and honest in your responding.

2106

2107 1. In most ways my life is close to my ideal

2108 2. The conditions of my life are excellent

2109 3. I am satisfied with my life

2110 4. So far I have gotten the important things I want in life

2111 5. If I could live my life over, I would change almost nothing

2112 **Response Options:** Strongly agree, Agree, Slightly agree, Neither agree nor disagree, Slightly disagree, Disagree,
2113 Strongly disagree

2114

2115 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
2116 of all items.

2117

2118 **Reference:** Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal*
2119 *of Personality Assessment*, 49, 71-75.

2120

2121 **Burnout Questionnaire**

2122

2123 **Item Text:**

2124

2125 On the following pages are statements of job-related feelings. Please read each statement carefully and decide if you
2126 ever felt this way about your job over **the past two weeks**. If you have never had this feeling, select the Never
2127 option. If you have had this feeling, indicate how often you felt it by selecting the option that best describes how
2128 frequently you felt that way.

2129

2130 Items: the scale is proprietary and requires usage rights.

2131

2132 **Response Options:** Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A
2133 few times a week, Every day.

2134

2135 **Scoring:** Each item is scored with 0 = Never and 6 = Every day. Scale is divided in 3 score: exhaustion (sum item's
2136 score 1, 2, 3, 4, 6); cynicism (sum item's score 8, 9, 13, 14, 15); and professional efficacy (sum item's score 5, 7, 10,
2137 11, 12, 16).

2138

2139 **Reference:** Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W.B., Schwab, R.L. (2018). *Maslach Burnout*
2140 *Inventory*: Fourth edition. Published by Mind Garden, Inc.

2141

2142 **Spillover questionnaire**2143 **Item Text:**

2144

Please use the scale below to answer the next set of questions, thinking about **the past 2 weeks**.

2146

2147

1. My work schedule makes it difficult to fulfill personal responsibilities.

2148

2. Because of my job, I don't have the energy to do things with my family or other important people in my life.

2149

3. Job worries or problems distract me when I am not at work

2150

4. My work leaves me enough time to attend to my personal responsibilities.

2151

5. My work gives me energy to do things with my family and other important people in my life.

2152

6. Because of my job, I am in a better mood at home.

2153

2154

Response Options: Rarely, Sometimes, Often, Most of the time

2155

2156

Scoring: Each item is scored with 1 = Rarely and 4 = Most of the time. Subscale: Work-to-family enrichment: Sum of score for items 4, 5, 6; Work-to-family conflict: Sum of score for items 1, 2, 3;

2157

2158

2159

Reference: https://hrs.isr.umich.edu/sites/default/files/meta/2020/core/qnaire/online/2020_SAQ_v13.pdf

2160

Cho, E., & Chen, T.-Y. (2018). The effects of work family experiences on health among older

2161

workers. *Psychology and Aging, 33*(7), 993-1006. doi:10.1037/pag0000293

2162

2163

Physical Health

2164

2165

Physical Health Symptoms

2166

2167

Item Text:

2168

2169

In the past two weeks, have you experienced any of the following symptoms:

2170

2171

1. None

2172

2. Diarrhea/constipation / other stomach problems

2173

3. Headache

2174

4. Backache

2175

5. Muscle soreness

2176

6. Fatigue

2177

7. Joint pain

2178

8. Muscle weakness

2179

9. Cough

2180

10. Sore throat

2181

11. Fever

2182

12. Chills

2183

13. Other cold and flu symptoms

2184

14. Nausea

2185

2186

Response Options: A check box was provided for each option in which participants could select it or leave it blank

2187

2188

Scoring: Each Symptom was binary coded as an individual variable in which 1 represents the presence of the symptom and 0 represented the absence.

2189

2190

2191 **Health Behaviours**

2192

2193 **Leisure Time Physical Activity**

2194

2195 **Item Text:**

2196

2197 **Number of Times**

2198 Considering the **past 7-day period** (last week), how many times on average did you do STRENUOUS EXERCISE
 2199 for **more than 15 minutes** during your **free time**, not including your time with the Apps provided to you in the
 2200 study (if you are in the exercise group)?

2201

2202 STRENUOUS EXERCISE (HEART BEATING RAPIDLY; i.e. running, jogging, hockey, football, soccer, squash,
 2203 basketball, netball, judo, vigorous swimming, vigorous long distance bicycling)

2204

2205 MODERATE EXERCISE (NOT EXHAUSTING; i.e. fast walking, baseball, tennis, easy bicycling, volleyball,
 2206 badminton, easy swimming, alpine skiing, popular and folk dancing.)

2207

2208 MILD EXERCISE (MINIMAL EFFORT; i.e. yoga, archery, fishing from river bank, bowling, horseshoes, golf,
 2209 snow-mobiling, easy walking.)

2210

2211 **Length of Session**

2212 Considering the **past 7-day period** (last week), how **many minutes was each** STRENUOUS intensity exercise
 2213 session (approximately), not including your time with the Apps provided to you in the study (if you are in the
 2214 exercise group)?

2215

2216 **Response Options:** For each of strenuous, moderate and mild exercise, participants reported the number of times (0-
 2217 90). If they reported one or more sessions, they were asked about length of session (drop down menu with hours,
 2218 minutes).

2219

2220 **Reference:** Shephard, R. (1997). Godin leisure-time exercise questionnaire. *Medicine & Science in Sports &*
 2221 *Exercise*, 29(6), S36-S38.

2222

2223 **Down Dog Items – Only for the Exercise Group**

2224

2225 **Item Text:**

2226

2227 1. In **the past two weeks**, did you complete any of your Down Dog workouts with anyone in your household?

2228

2229 2. [Branched option if participant indicated someone used Downdog with them] In **the past two weeks**, how many
 2230 of the workouts were completed with another person?

2231

2232 3. Did anyone in your household use your Down Dog app without you?

2233

2234 4. [Branched option if participant indicated someone use Downdog without them] in **the past two weeks**, how many
 2235 times did the person in your household use the app?

2236

2237 **Response Options:** Questions 1 & 3 were binary Yes / No items. Questions 2 & 4 were numerical text entry

2238

2239 **Scoring:** Not currently scored

2240

2240

2241 **Perceived Variety of Exercise**2242 **Item Text:**

2243

2244 Please answer the following questions by considering how you've felt **during the past two weeks** while you were
 2245 exercising.

2246

2247 1.I felt like I engage in a variety of exercises.

2248 2.I felt like I try a range of exercises.

2249 3.I felt like I change the types of exercise that I do.

2250 4.I felt like my exercise program is varied.

2251 5.I felt like I experience variety in my exercise.

2252

2253 **Response Options:** False, mostly false, more false than true, more true than false, mostly true, and true

2254

2255 **Scoring:** Each item is scored with 1 = False and 6 = True. Scale is scored with the sum score of all items.

2256

2257 **Reference:** Sylvester, B. D., Standage, M., Ark, T. K., Sweet, S. N., Crocker, P. R., Zumbo, B. D., & Beauchamp,
 2258 M. R. (2014). Is variety a spice of (an active) life?: perceived variety, exercise behavior, and the mediating role of
 2259 autonomous motivation. *Journal of Sport and Exercise Psychology*, 36(5), 516-527.

2260

2261 **Alcohol Habits**

2262

2263 **Item Text:**

2264

2265 **Any Drinking**

2266 During **the past weeks**, have you had at least one drink of any alcoholic beverage such as beer, wine, wine coolers,
 2267 or liquor?

2268

2269 **Frequency of Drinking**

2270 During **the past weeks**, how often did you drink any alcoholic beverages, on the average?

2271

2272 **Amount of Alcohol Consumed**

2273 On the days when you drank, about how many drinks did you drink on the average? ("By one 'drink', we mean either
 2274 a bottle of beer, a wine cooler, a glass of wine, a shot of liquor, or a mixed drink.")

2275

2276 **Response Options:**

2277

2278 **Any Drinking**

2279 Yes / No

2280

2281 **Frequency of Drinking**

2282 1 or 2 days a week, 3 or 4 days a week, 5 or 6 days a week, everyday

2283

2284 **Amount of Alcohol Consumed**

2285 (numeric response)

2286

2287 **Current Smoking Status**

2288

2289 **Item Text:** Do you smoke cigarettes regularly NOW?

2290

2291 **Response Options:** Yes / No

2292

2293 **Scoring:** Yes = 1, No = 0

2294

2295 **Smoking History**

2296

2297 **Item Text:** Have you ever smoked cigarettes regularly -- that is, at least a few cigarettes every day?

2298

2299 **Response Options:** Yes / No

2300

2301 **Scoring:** Yes = 1, No = 0

2302

2303 **Income**

2304

2305 **Item Text:**

2306

2307 What is your best estimate of your **total household income** received by all household members, from all sources, before taxes and deductions, during the year ending December 31, 2021

2308

2309 Income can come from various sources such as from work, investments, pensions, or government. Examples include
2310 Employment Insurance, Social Assistance, Child Tax Benefit, and other income such as child support, spousal
2311 support (alimony), and rental income.

2312

2313 **Response Options:**

2314

2315

-
- | | | |
|--------------------|---------------------|-------------------------------------|
| • 0 or less than 0 | • 80,001 - 90,000 | • 170,001 - 180,000 |
| • 1 - 10,000 | • 90,001 - 10,0000 | • 180,001 - 190,000 |
| • 10,001 - 20,000 | • 100,001 - 110,000 | • 190,001 - 20,0000 |
| • 20,001 - 30,000 | • 110,001 - 120,000 | • 200,001 - 210,000 |
| • 30,001 - 40,000 | • 120,001 - 130,000 | • 210,001 - 220,000 |
| • 40,001 - 50,000 | • 130,001 - 140,000 | • 220,001 - 230,000 |
| • 50,001 - 60,000 | • 140,001 - 150,000 | • 230,001 - 240,000 |
| • 60,001 - 70,000 | • 150,001 - 160,000 | • 240,001 - 250,000 |
| • 70,001 - 80,000 | • 160,001 - 170,000 | • 250001+ |
| | | • Do not know/ prefer not to answer |
-

2316

2317

2318

2319 **Current Living Situation**

2320

2321 **Item Text:** What is your current living situation?

2322

2323 **Response Options:** Living alone, Living with others, prefer not to answer

2324

2325 **Scoring:** Living with others = 1, Living alone = 0

2326

2327 **Current Living Situation (With Others)**

2328

2329 **Item Text:** [branched option for those who indicate that they are living with others]

2330

2331 You indicated that you are currently living with others. Please check all that apply.

2332

2333 **Response Options:**

2334

2335 • spouse/partner,

2336 • parent(s),

2337 • child(ren),

2338 • friend(s), roommate(s)

2339 • Other (please specify)

2340

2341 **Current Employment Situation**

2342 **Item Text:** What about your current employment situation – **are you working now for pay, self-employed, looking for work, temporarily laid off, retired, a homemaker, a full-time or part-time student, etc.?**

2344

2345 **Response Options:**

2346

2347 Working full-time

2348 Working part-time

2349 Full-time student

2350 Part-time student

2351 Maternity or sick leave (volunteered)

2352 Permanently disabled (volunteered)

2353 Other _____ (specify)

2354 Don't know/not sure

2355 Prefer not to say

2356

2357

2358 **Scoring:** Multiple selections allow. Those who selected other were offered a textbox

2359 **Work Situation**2360 **Absenteeism**

2361 **Item Text:** In the **past 2 weeks**, how many days did you call in sick when you were scheduled to work?

2362

2363 **Response Options:** Scroll down list of 0-14

2364

2365 **Overtime**

2366 **Item Text:** In the **past 2 weeks**, how many overtime shifts did you work?

2367

2368 **Response Options:** Scroll down list of 0-14

2369

2370 **Work hour and shift**

2371 **Item Text:** In the **past 2 weeks**, what was your main work schedule?

2372

2373 **Response Options:**

2374

2375 Day 8-hour shifts

2376 Night 8-hour shifts

2377 Day 12-hour shifts

2378 Night 12-hour shifts

2379 Mixed day and night 8-hour shifts

2380 Mixed day and night 12-hour shifts

2381 Other _____ (specify)

2382 Don't know/not sure

2383 Prefer not to answer

2384

2385 **Scoring:** Multiple selections allow. Those who selected other were offered a textbox

2386

2387

2388

2389

2390

2391 12.5 Week 24 survey

2392
2393
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2400
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2406

Week 24 questionnaire COPE HCW

Questionnaire Instructions

Please begin this questionnaire by reading all of the instructions thoroughly, and then answer the questions to the best of your knowledge. If you choose not to answer any question, just leave it blank and move on to the next question. Please note that some of the questions may appear redundant. This is done for an important reason that has to do with the reliability and validity of our questionnaire. Therefore, it is important that you answer as many questions as you can, even if they seem like they are asking the same thing. We need the most complete information possible to include your input into our results. Thank you for participating in this study! If you have any questions about completing the questionnaire, please feel free to ask the researcher for any additional help that you may require.

2407 **Health Scales**
2408

2409 **Physical Health**

2410 **Item Text:** For **the past two weeks**, would you say your PHYSICAL HEALTH is excellent, very good, good, fair,
2411 or poor?

2412

2413 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

2414

2415 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

2416

2417 **Reference:** NA – but frequently used in Statistics Canada surveys

2418

2419 **Mental Health**

2420 **Item Text:** For **the past two weeks**, would you say your MENTAL OR EMOTIONAL HEALTH is excellent, very
2421 good, good, fair, or poor?

2422

2423 **Response Options:** Excellent, Very Good, Good, Fair, and Poor

2424

2425 **Scoring:** Scores were converted to numeric with 1 = Poor and 5 = Excellent

2426

2427 **Reference:** NA – but frequently used in Statistics Canada surveys

2428

2429

2430 **Stress**

2431 **Item Text:** Thinking about the amount of stress in your life for **the past two weeks**, would you say that most days
2432 are:

2433

2434 **Response Options:** not at all stressful, not very stressful, a bit stressful, quite a bit stressful, and extremely stressful

2435

2436 **Scoring:** Scores were converted to numeric with 1 = not at all stressful and 5 = extremely stressful

2437

2438 **Reference:** NA – but frequently used in Statistics Canada surveys

2439

2440

2441 **Sleep Quality**

2442

2443 **Item Text:** During the past two weeks, how would you rate your sleep quality overall?

2444

2445 **Response Options:** Very good, Fairly good, Fairly bad, Very bad

2446

2447 **Scoring:** Scores were converted to numeric with 1 = very good and 4 = very bad

2448

2449 **Reference:** Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Research*, 28(2), 193-213.2450 https://www.sleep.pitt.edu/wp-content/uploads/Study_Instruments_Measures/PSQI-Instrument.pdf

2451

2452 **Psychological Scales**

2453

2454 **Flourishing**

2455

2456 **Item Text:**

2457

2458 Below are 8 statements with which you may agree or disagree about how you have been feeling **during your past two weeks**. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

2460

2461

2462 1. I lead a purposeful and meaningful life.

2463

2464 2. My social relationships are supportive and rewarding

2465

2466 3. I am engaged and interested in my daily activities

2467

2468 4. I actively contribute to the happiness and well-being of others

2469

2470 5. I am competent and capable in the activities that are important to me

2471

2472 6. I am a good person and live a good life

2473

2474 7. I am optimistic about my future

2475

2476 8. People respect me

2477

2478 **Response Options:** Strongly disagree, Somewhat disagree, A little disagree, Neither agree nor disagree, A little agree, Somewhat agree, and Strongly agree

2479

2480 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score of all items.

2481

2482 **Reference:** Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010).2483 New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156

2484

2485

2481 **Depression**

2482

2483 **Item Text:**

2484

2485 Below is a list of the ways you might have felt or behaved. Please tell us how often you have felt this way **during**
 2486 **the past two weeks.**

2487

2488 1.I was bothered by things that usually don't bother me.

2489 2.I had trouble keeping my mind on what I was doing.

2490 3.I felt depressed.

2491 4.I felt that everything I did was an effort.

2492 5.I felt hopeful about the future.*

2493 6.I felt fearful.

2494 7.My sleep was restless.

2495 8.I was happy.*

2496 9.I felt lonely.

2497 10.I could not get "going."

2498

2499 **Response Options:** Rarely or none of the time (less than 1 day), Some or a little of the time (1-2 days),

2500 Occasionally or a moderate amount of time (3-4 days), Most or all of the time (5-7 days)

2501

2502 **Scoring:** Each item is scored with 0 = Rarely or none of the time and 3 = Most or all of the time. Scale is scored
 2503 with the sum score of all items. Note: items 5 and 8 are reverse-coded.

2504

2505 **Reference:** Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in
 2506 well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine, 10*(2), 77-84.

2507

2508 **Resilience**

2509

2510 **Item Text:**

2511

2512 Please respond to each item by marking one box per row. Please respond for **the past two weeks.**

2513

2514 1.I tend to bounce back quickly after hard times

2515 2.I have a hard time making it through stressful events*

2516 3.It does not take me long to recover from a stressful event

2517 4.It is hard for me to snap back when something bad happens*

2518 5.I usually come through difficult times with little trouble

2519 6.I tend to take a long time to get over set-backs in my life*

2520

2521 **Response Options:** Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

2522

2523 **Scoring:** Each item is scored with 1 = Strongly Disagree and 5 = Strongly Agree. Scale is scored with the sum score
 2524 of all items. Note: items 2, 4, and 6 are reverse-coded.

2525

2526 **Reference:** Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief
 2527 resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*(3), 194-200

2528

2529 **Life Satisfaction**

2530

2531 **Item Text:** Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your
 2532 agreement for the **past two weeks** with each item. Please be open and honest in your responding.

2533

2534 1. In most ways my life is close to my ideal

2535 2. The conditions of my life are excellent

2536 3. I am satisfied with my life

2537 4. So far I have gotten the important things I want in life

2538 5. If I could live my life over, I would change almost nothing

2539

2540 **Response Options:** Strongly agree, Agree, Slightly agree, Neither agree nor disagree, Slightly disagree, Disagree,
 2541 Strongly disagree

2542

2543 **Scoring:** Each item is scored with 1 = Strongly disagree and 7 = Strongly agree. Scale is scored with the sum score
 2544 of all items.

2545

2546 **Reference:** Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal*
 2547 *of Personality Assessment*, 49, 71-75.

2548

2549 **Burnout Questionnaire**

2550

2551 **Item Text:**

2552

2553 During the **past two weeks**:

2554

2555 On the following pages are statements of job-related feelings. Please read each statement carefully and decide if you
 2556 ever feel this way about your job. If you have never had this feeling, select the Never option. If you have had this
 2557 feeling, indicate how often you feel it by selecting the option that best describes how frequently you feel that way.

2558

2559 Items: the scale is proprietary and requires usage rights.

2560

2561 **Response Options:** Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A
 2562 few times a week, Every day.

2563

2564 **Scoring:** Each item is scored with 0 = Never and 6 = Every day. Scale is divided in 3 score: exhaustion (sum item's
 2565 score 1, 2, 3, 4, 6); cynicism (sum item's score 8, 9, 13, 14, 15); and professional efficacy (sum item's score 5, 7, 10,
 2566 11, 12, 16).

2567

2568 **Reference:** Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W.B., Schwab, R.L. (2018). Maslach Burnout
 2569 Inventory: Fourth edition. Published by Mind Garden, Inc.

2570

2571 **Spillover questionnaire**2572 **Item Text:**

2573

2574 Please use the scale below to answer the next set of questions, thinking about **the past 2 weeks**.

2575

2576 1. My work schedule makes it difficult to fulfill personal responsibilities.

2577 2. Because of my job, I don't have the energy to do things with my family or other important people in my life.

2578 3. Job worries or problems distract me when I am not at work

2579 4. My work leaves me enough time to attend to my personal responsibilities.

2580 5. My work gives me energy to do things with my family and other important people in my life.

2581 6. Because of my job, I am in a better mood at home.

2582

2583 **Response Options:** Rarely, Some times, Often, Most of the time

2584

2585 **Scoring:** Each item is scored with 1 = Rarely and 4 = Most of the time. Subscale: Work-to-family enrichment: Sum
2586 of score for items 4, 5, 6; Work-to-family conflict: Sum of score for items 1, 2, 3;

2587

2588 **Reference:** https://hrs.isr.umich.edu/sites/default/files/meta/2020/core/qnaire/online/2020_SAQ_v13.pdf

2589 Cho, E., & Chen, T.-Y. (2018). The effects of work family experiences on health among older

2590 workers. *Psychology and Aging, 33*(7), 993-1006. doi:10.1037/pag0000293

2591

2592 **Physical Health**

2593

2594 **Physical Health Symptoms**

2595

2596 **Item Text:**

2597

2598 **In the past two weeks**, have you experienced any of the following symptoms:

2599 15. Headache

2600 16. Backache

2601 17. Muscle soreness

2602 18. Fatigue

2603 19. Joint pain

2604 20. Muscle weakness

2605 21. Cough

2606 22. Sore throat

2607 23. Fever

2608 24. Chills

2609 25. Other cold and flu symptoms

2610 26. Nausea

2611 27. Diarrhea/constipation / other stomach problems

2612 **Response Options:** A check box was provided for each option in which participants could select it or leave it blank

2613

2614 **Scoring:** Each Symptom was binary coded as an individual variable in which 1 represents the presence of the
2615 symptom and 0 represented the absence.

2616

2617 **Health Behaviours**

2618

2619 **Leisure Time Physical Activity**

2620

2621 **Item Text:**

2622

2623 **Number of Sessions**

2624 Consider the **past 7-day period (last week)**, how many times did you do the following kinds of exercise for more
 2625 than 10 minutes during your free time, not including your time with the Apps provided to you in the study (if you
 2626 are in the exercise group).

2627

2628 STRENUOUS EXERCISE (HEART BEATING RAPIDLY; i.e. running, jogging, hockey, football, soccer, squash,
 2629 basketball, netball, judo, vigorous swimming, vigorous long distance bicycling)

2630

2631 MODERATE EXERCISE (NOT EXHAUSTING; i.e. fast walking, baseball, tennis, easy bicycling, volleyball,
 2632 badminton, easy swimming, alpine skiing, popular and folk dancing.)

2633

2634 MILD EXERCISE (MINIMAL EFFORT; i.e. yoga, archery, fishing from river bank, bowling, horseshoes, golf,
 2635 snow-mobiling, easy walking.)

2636

2637 **Length of Session**

2638 Considering the **past 7-day period** (last week), how **many minutes was each** STRENUOUS intensity exercise
 2639 session (approximately), not including your time with the Apps provided to you in the study (if you are in the
 2640 exercise group)?

2641

2642 **Response Options:** For each of strenuous, moderate and mild exercise, participants reported the number of times (0-
 2643 90). If they reported one or more sessions, they were asked about length of session (drop down menu with hours,
 2644 minutes).

2645

2646 **Reference:** Shephard, R. (1997). Godin leisure-time exercise questionnaire. *Medicine & Science in Sports &*
 2647 *Exercise*, 29(6), S36-S38.

2648

2649 **Perceived Variety of Exercise**

2650

2651 **Item Text:**

2652

2652 Please answer the following questions by considering how you've felt **during the past two weeks** while you are

2653

2654

- 2655 6. I feel like I engage in a variety of exercises.
 2656 7. I feel like I try a range of exercises.
 2657 8. I feel like I change the types of exercise that I do.
 2658 9. I feel like my exercise program is varied.
 2659 10. I feel like I experience variety in my exercise.

2660

2661 **Response Options:** False, mostly false, more false than true, more true than false, mostly true, and true

2662

2663 **Scoring:** Each item is scored with 1 = False and 6 = True. Scale is scored with the sum score of all items.

2664

2665 **Reference:** Sylvester, B. D., Standage, M., Ark, T. K., Sweet, S. N., Crocker, P. R., Zumbo, B. D., & Beauchamp,
 2666 M. R. (2014). Is variety a spice of (an active) life?: perceived variety, exercise behavior, and the mediating role of
 2667 autonomous motivation. *Journal of Sport and Exercise Psychology*, 36(5), 516-527.

2668

2669

2670

2671 **Alcohol Habits**

2672

2673 **Item Text:**

2674

2675 ***Any Drinking***

2676 During **the past two weeks**, have you had at least one drink of any alcoholic beverage such as beer, wine, wine coolers, or liquor?

2678

2679 ***Frequency of Drinking***

2680 During **the past two weeks**, how often did you drink any alcoholic beverages, on the average?

2681

2682 ***Amount of Alcohol Consumed***

2683 On the days when you drank, about how many drinks did you drink on the average? ("By one 'drink', we mean either a bottle of beer, a wine cooler, a glass of wine, a shot of liquor, or a mixed drink.")

2685

2686 **Response Options:**

2687

2688 ***Any Drinking***

2689 Yes / No

2690

2691 ***Frequency of Drinking***

2692 1 or 2 days a week, 3 or 4 days a week, 5 or 6 days a week, everyday

2693

2694 ***Amount of Alcohol Consumed***

2695 (numeric response)

2696

2697 **Current Smoking Status**

2698

2699 **Item Text:** Do you smoke cigarettes regularly NOW?

2700

2701 **Response Options:** Yes / No

2702

2703 **Scoring:** Yes = 1, No = 0

2704

2705

2706 **Smoking History**

2707

2708 **Item Text:** Have you ever smoked cigarettes regularly -- that is, at least a few cigarettes every day?

2709

2710 **Response Options:** Yes / No

2711

2712 **Scoring:** Yes = 1, No = 0

2713

2714 **Income**

2715

2716 **Item Text:**

2717

2718 What is your best estimate of your **total household income** received by all household members, from all sources,
2719 before taxes and deductions, during the year ending December 31, 2019?

2720

2721 Income can come from various sources such as from work, investments, pensions or government. Examples include
2722 Employment Insurance, Social Assistance, Child Tax Benefit and other income such as child support, spousal
2723 support (alimony) and rental income.

2724

2725 **Response Options:**

2726

-
- | | | |
|--------------------|---------------------|-------------------------------------|
| • 0 or less than 0 | • 80,001 - 90,000 | • 170,001 - 180,000 |
| • 1 - 10,000 | • 90,001 - 10,0000 | • 180,001 - 190,000 |
| • 10,001 - 20,000 | • 100,001 - 110,000 | • 190,001 - 20,0000 |
| • 20,001 - 30,000 | • 110,001 - 120,000 | • 200,001 - 210,000 |
| • 30,001 - 40,000 | • 120,001 - 130,000 | • 210,001 - 220,000 |
| • 40,001 - 50,000 | • 130,001 - 140,000 | • 220,001 - 230,000 |
| • 50,001 - 60,000 | • 140,001 - 150,000 | • 230,001 - 240,000 |
| • 60,001 - 70,000 | • 150,001 - 160,000 | • 240,001 - 250,000 |
| • 70,001 - 80,000 | • 160,001 - 170,000 | • 250001+ |
| | | • Do not know/ prefer not to answer |
-

2727

2728 **Current Living Situation**

2729

2730 **Item Text:** What is your current living situation?

2731

2732 **Response Options:** Living alone, Living with others

2733

2734 **Scoring:** Living with others = 1, Living alone = 0

2735

2736

2737 **Current Living Situation (With Others)**

2738

2739 **Item Text:** [branched option for those who indicate that they are living with others]

2740

2741 You indicated that you are currently living with others. Please check all that apply.

2742

2743 **Response Options:**

2744

- 2745 • spouse/partner,
- 2746 • parent(s),
- 2747 • child(ren),
- 2748 • friend(s), roommate(s)
- 2749 • Other (please specify)

2750

2751

2752

2753 **Current Employment Situation**

2754

2755 **Item Text:** What about your current employment situation – are you working now for pay, self-employed, looking
 2756 for work, temporarily laid off, retired, a homemaker, a full-time or part-time student, etc?

2757

2758 **Response Options:**

2759

- 2760 Working full-time
 2761 Working part-time
 2762 Full-time student
 2763 Part-time student
 2764 Maternity or sick leave (volunteered)
 2765 Permanently disabled (volunteered)
 2766 Other _____ (specify)
 2767 Don't know/not sure

2768

2769 **Scoring:** Multiple selections allow. Those who selected other were offered a textbox

2770

2771 **Work situation**

2772

Absenteeism

2773 **Item Text:** In the **past 2 weeks**, how many days did you call in sick when you were scheduled to work?

2774

2775 **Response Options:** Scroll down list of 0-14

2776

2777 **Overtime**

2778 **Item Text:** In the **past 2 weeks**, how many overtime shifts did you work?

2779

2780 **Response Options:** Scroll down list of 0-14

2781

2782 **Work hour and shift**

2783 **Item Text:** In the **past 2 weeks**, what was your main work schedule?

2784

2785 **Response Options:**

2786

- 2787 Day 8-hour shifts
 2788 Night 8-hour shifts
 2789 Day 12-hour shifts
 2790 Night 12-hour shifts
 2791 Mixed day and night 8-hour shifts
 2792 Mixed day and night 12-hour shifts
 2793 Other _____ (specify)
 2794 Don't know/not sure
 2795 Prefer not to answer

2796

2797 **Scoring:** Multiple selections allow. Those who selected other were offered a textbox

2798

2799

2800 **12.6 Pre-screening interview script**

2801

2802

2803 **Start of Block: Default Question Block**

2804

2805 Make sure that you have the training manual open for reference, in case you receive a question that you are unsure
2806 how to answer.

2807

2808 Q24 Who is the potential participant that you are calling?

2809 First Name (1) _____ Last Name (2)

2810

2811

2812

2813

2814

2815 Q1 **Voicemail:** "Hi there. My name's [*interviewer name*] and I'm calling from the University of British Columbia
2816 about the COPE HCW Trial. We had a scheduled phone interview with [*interested person's name*] at [*time*]. I will
2817 call back in 10 minutes, and if we can't get in touch, a project coordinator will be in contact through email to
2818 reschedule. Thanks very much. Have a great day."

2819 Say: "Hi there, I'm calling for [*participant's name*] from the University of British Columbia Fitness, Aging and
2820 Stress Lab. [*pause and make sure you are talking to the right person*]. Thank you for your interest in our study. My
2821 name is [*give your name*] and I'm a research assistant for the study entitled "**The COVID-19 Pandemic and**
2822 **Exercise for Healthcare Workers Trial**" or what we're calling the COPE HCW trial. I'm calling to go over the
2823 purpose of the study, its design, and to assess your eligibility and interest. This will take approximately 30 minutes. I
2824 will be collecting some personal information during this call; however, I assure you that everything is kept
2825 confidential and is stored on secure servers. At the end of the study, all data is de-identified so it can never be linked
2826 back to you."

2827 Say: "Before I tell you more about this study, do you have access to a device with internet to use during this phone
2828 call?"

2829 Yes (4)

2830 No (5)

2831

2832

2833

2834 *Display This Question:*

2835 *If Voicemail: "Hi there. My name's [*interviewer name*] and I'm calling from the University of British... = No*

2836

2837 Q23 IF 'No', say "to determine whether you are ready to participate in this study we need to go through some
2838 questions which require a computer or other device that has internet access.

2839 Please let me know when we can 'rearrange' a phone call so that we can complete these questions". **[Record time**
2840 **and contact details to rearrange and email this information to the project coordinator]**

2841

2842

2843

2844

2845

2846

2847

Skip To: End of Survey If Condition: IF 'No', say "to determine ... Is Displayed. Skip To: End of Survey.

2848

2849

2850

2851 Q28 Say: We are going to go over the study briefly and the eligibility requirements. Were you able to get a chance
2852 to go over the consent form we sent you?

2853 **[IF NO]** No problem, we'll go over everything now, stop me at any point with any questions that come up.

2854 **[IF YES]** Great, a lot of what we go over today is the same as what you've read in the consent form. We want to be
2855 thorough, so I apologize for the repetition.

2856 Briefly, participation in this study will involve home workouts with the use of the Down Dog platform, as well as
2857 survey completion every two weeks. Down Dog is a company based in San Francisco that developed a suite of apps
2858 for working out at home, including a yoga app, one for aerobic circuit training, one for jogging and running, and one
2859 for barre. Down Dog also provides a meditation app; however, this application will not be used for the purposes of
2860 this study. Participants will be randomized to 1 of 2 groups, an exercise group, or a waitlist group. There is equal
2861 chance that you will be placed in each group. For 12 weeks, eligible participants who are randomized to the exercise
2862 group will be asked to complete 4 workouts from the Down Dog app each week of approximately 20 minutes per
2863 workout. Waitlist participants will only gain access to the suite of apps after the first 12 weeks of the study.

2864 Regardless of which condition you are in, every two weeks participants will be asked to fill out a survey asking
2865 about wellbeing and health. At the end of the 12 weeks, some participants from the exercise condition will be
2866 invited to participate in individual interviews and focus group discussions to provide feedback on the intervention.

2867 At 24 weeks after randomization, all participants, regardless of condition, will be asked to complete a final follow-
2868 up survey. Apart from the free 1-year membership to Down Dog that all participants receive, for every survey they
2869 respond to, eligible participants will be entered into a draw for 1 of 22 prizes: 2 Apple Watch 7s and 20 gift cards for
2870 use at a variety of merchants valued at \$100 each. Also, participants will be compensated \$35 for their participation
2871 in the individual interview or focus group discussion. Do you have any questions at this time?
2872

2873 Are you interested in proceeding with helping us figure out if you are eligible for the study?

2874 [if no] Thank you for your time. Have a good rest of your day

2875 [If yes], Great. Next, I will ask you a series of questions to check to see if you are eligible for this study. If you are,
2876 then we can proceed with a deeper conversation about the project and securing your consent to participant.

2877

2878

2879

Q19 Do you work in one of the Providence Health Care centres in BC?

2880 Yes (1)

2881 No (2)

2882

2883

Skip To: Q18 If Do you live in Canada? = No

2884

2885

2886
2887
2888
2889

Q29 Are you able to read and understand English at the level necessary to fully understand what you will be required to do in the study and the risks associated? Note that the online surveys that you will need to complete will be formatted in English.

2890 Yes (4)

2891 No (5)
2892

2893 *Skip To: Q18 If Are you able to read and understand English at the level necessary to fully understand what you w... = No*
2894

2895

2896

2897

2898

2899

2900 Q2 This study involves taking part in a physical activity program online. Do you have access to the internet at home or on a device (e.g., computer, tablet, phone) that you could use to access the apps?

2902 Yes (1)

2903 No (2)
2904

2905 *Skip To: Q18 If This study involves taking part in a physical activity program online. Do you have access to the... = No*
2906

2907

2908

2909

2910 Q3 Please tell me how old you are?

2911

2912

2913 *Skip To: Q18 If Condition: Please tell me how old you ... Is less Than 18. Skip To: If the participant does not mee...*
2914

2915

2916

2917

Q30 Are you currently retired?

2918 Yes (4)

2919 No (5)
2920

2921 *Skip To: Q18 If Are you currently retired? = Yes*
2922

2923

2923

2924

2925 Q10

2926 This question is about **leisure time** physical activity, so activity you do outside of work. Can you describe to me
 2927 what a typical week of FREE time activity consists of for you during the past month? Remember, free time activity
 2928 is activity when you're not at work. *[Once they have described, read them 2 statements that most closely match what*
 2929 *they have described to you, ask them to pick the statement that best describes them.] [During the past **month**, which*
 2930 *statement best describes the kinds of physical activity you usually performed during your FREE TIME (i.e.,*
 2931 *recreational or leisure time)?]*

2932 (1) I did not engage in much physical activity. I mostly did things like watching television, reading, playing
 2933 cards, or playing computer games. Only occasionally, no more than once or twice a month, did I do
 2934 anything more active such as getting outdoors for a walk or playing tennis.

2935 (2) Once or twice a week, I engaged in light activities such as getting outdoors on the weekends for a walk.
 2936 Or I did some light chores around the house such as sweeping floors or vacuuming.

2937 (3) About three times a week, I did some moderate activity such as brisk walking, swimming, or riding a
 2938 bike for about 15–20 minutes each time. Or about once a week, I did some moderately difficult chores such
 2939 as raking, washing windows, or mowing the lawn for about 45–60 minutes. Or about once a week, I played
 2940 sports such as doubles tennis or basketball for about 45–60 minutes.

2941 (4) Almost daily, that is five or more times a week, I did some moderate activity such as brisk walking,
 2942 swimming, or riding a bike for 30 minutes or more each time. Or about once a week, I did some moderately
 2943 difficult chores or played team sports for 2 hours or more.

2944 (5) About three times a week, I engaged in a regular program of physical fitness involving some kind of
 2945 heavy or vigorous physical activity such as running or riding hard on a bicycle for 30 minutes or more each
 2946 time. Or I did chores such as heavy gardening or played active sports such as handball or singles tennis for
 2947 60 minutes or more each time.

2948 (6) Almost daily, that is, five or more times a week, I engaged in a regular program of physical fitness
 2949 involving some kind of heavy or vigorous physical activity for 30 minutes or more each time.

2950

2951 *Skip To: Q18 If This question is about leisure time physical activity, so activity you do outside of work. Can yo... =*
 2952 *Almost daily, that is five or more times a week, I did some moderate activity such as brisk walking, swimming, or*
 2953 *riding a bike for 30 minutes or more each time. Or about once a week, I did some moderately difficult chores or*
 2954 *played team sports for 2 hours or more.*

2955 *Skip To: Q18 If This question is about leisure time physical activity, so activity you do outside of work. Can yo... =*
 2956 *About three times a week, I engaged in a regular program of physical fitness involving some kind of heavy or*
 2957 *vigorous physical activity such as running or riding hard on a bicycle for 30 minutes or more each time. Or I did*
 2958 *chores such as heavy gardening or played active sports such as handball or singles tennis for 60 minutes or more*
 2959 *each time.*

2960 *Skip To: Q18 If This question is about leisure time physical activity, so activity you do outside of work. Can yo... =*
 2961 *Almost daily, that is, five or more times a week, I engaged in a regular program of physical fitness involving some*
 2962 *kind of heavy or vigorous physical activity for 30 minutes or more each time.*

2963

2964

2965

2966

2967

2968 Q39 You could be randomized to either of the groups: either getting access to the suite of apps right away or the
 2969 waitlist control, where you will have to wait 12 weeks to gain access to the free year of membership to the apps.
 2970 Please think about this for a moment. Are you ready, able, and willing to complete the study and all it requires
 2971 regardless of what group you are randomized to?

2972 Yes (1)

2973 No (2)

2974

2975 *Skip To: Q18 If You could be randomized to any of the groups, yoga, HIIT, combination, or the waitlist control. A...*
 2976 *= No*

2977

2978

2979

2980 Q25 SAY: "To complete the next question, I'll need to email you a link".

2981 *[Send the link to the PAR-Q+ survey to complete on qualtrics]*

2982 **Then say:** "Can you please just confirm that *[read back email]* is the email address to which information about this
 2983 study should be sent **[check yes once correct]**".

2984 Yes (4)

2985 No (5)

2986

2987

2988

2989

2990 **Q4 Record phone number and email.**

2991 o Email (1) _____

2992 o Phone Number (3) _____

2993

2994

2995

2996

2997 **Q24 Once they have received the email SAY:** "Can you please click on the link to complete the PAR-Q+ survey.
2998 This survey is assessing your ability to begin exercise by asking a series of questions about your health. I will stay
2999 on the line with you as you complete it in case you have any questions."
3000

3001 *[Stay with them on the phone as they complete this screening measure.]*

3002

3003 *[After completing the PARQ+, participants will either be cleared to participate in physical activity
3004 or will be asked to speak with a physician and/or complete the ePARmedX+.]*

3005 *[When participant is finished survey]* **RAs ONLY: SAY** "Please copy and paste or take a screenshot of the last
3006 page (signature page) into an email and send it back to me, you can reply to the email I sent the initial link in."

3007 RAs: we have access to kin.copetrial@ubc.ca and qualtrics emails a copy of the survey to us.

3008 *[If they are cleared, continue below]*

3009 *[If they need to speak with a doctor or exercise physiologist, direct them to do so by following instructions below]*

3010

3011

3012

3013

3014 **Q5**

3015 *[If they have been directed to complete the ePARmedX+ then]***SAY** "please copy and paste the eparmedx.com link
3016 from the survey. Once you get to that webpage - click the link that says 'Take the ePARmed-X+ Survey NOW'.
3017 Once you hit complete, you'll see a signature page. Please copy and paste or take a screenshot of the last page
3018 (signature page) into an email and send it back to me."
3019 Copy and Paste the ePARmedX+ results that the participant emails to you:

3020 _____

3021 _____

3022 _____

3023 _____

3024 _____

3025

3026

3027

3028

3029

Q6 [Do not say to participants]. Does the PARQ+/ePARmedX+ clear participants to participate?

3030

Yes (1)

3031

No (2)

3032

3033

Skip To: Q8 If Does the PARQ+/ePARmedX+ clear participants to participate? = Yes

3034

3035

Display This Question:

If Does the PARQ+/ePARmedX+ clear participants to participate? = No

3036

3037

Q7 [If Qualtrics PAR-Q+ or the ePARmedX+ does not clear participants, they may take part with exercise physiologist or physician approval.]

3038

3039

3040

What is the reason the participant has not been cleared?

3041

One of the conditions on the ePARmedX+ (check flow chart: arthritis, cancer, cardiovascular conditions, asthma, psychological issue/learning disability, head trauma, spinal injury, diabetes, previous stroke)

3042

3043

3044

Something different (PCOS/reproductive issues, thyroid condition, fibromyalgia etc.)

3045

Participant does not want to disclose

3046

3047

3048

3049

Display This Question:

If [If Qualtrics PAR-Q+ or the ePARmedX+ does not clear participants, they may take part with exerci... = Something different (PCOS/reproductive issues, thyroid condition, fibromyalgia etc.)

3050

3051

3052

3053

Q49 **SAY:** "In order to clear you for exercise, you have the option to speak with our certified exercise physiologist, instead of going through your physician, to take part in the study. Would you like to continue and setup an appointment with our exercise physiologist to continue with study enrollment or would you prefer to speak with your physician?"

3054

3055

3056

3057

Exercise Physiologist (1) Physician (2) I no longer want to participate (3)

3058

3059 *Skip To: Q18 If SAY: "In order to clear you for exercise, you have the option to speak with our certified exercis... =*
3060 *I no longer want to participate*

3061
3062

Display This Question:
If SAY: "In order to clear you for exercise, you have the option to speak with our certified exercis... =
Exercise Physiologist

3063
3064 Q50 **SAY:** "Ok that's great. I can setup an appointment with them. Can you give me a couple dates and times that
3065 would work for me to call you? We will email to confirm and continue this process, usually we like to have
3066 participants speak with the exercise physiologist within a day or two." **[Record date and time that works for**
3067 **participants, email to continue the setup process with exercise physiologist]**

3068 _____

3069 _____

3070 _____

3071 _____

3072 _____

3073

3074 *Skip To: End of Survey If Condition:*

3075
3076

Display This Question:

3078 *If [If Qualtrics PAR-Q+ or the ePARmedX+ does not clear participants, they may take part with exerci... =*
3079 *One of the conditions on the ePARmedX+ (check flow chart: arthritis, cancer, cardiovascular conditions, asthma,*
3080 *psychological issue/learning disability, head trauma, spinal injury, diabetes, previous stroke)*

3081 *Or [If Qualtrics PAR-Q+ or the ePARmedX+ does not clear participants, they may take part with exerci... =*
3082 *Participant does not want to disclose*

3083 *Or SAY: "In order to clear you for exercise, you have the option to speak with our certified exercis... =*
3084 *Physician*

3085
3086 Q48 **Say:** "On the basis of your ePARmedX+ responses, you need to talk with your doctor before you start
3087 becoming much more physically active or before you can take part in this study.
3088 Tell your doctor about the PAR-Q+ and ePARmedX+ and which questions you answered yes". "I will send you an
3089 email with our physician information form to give to your doctor to better inform them of the study, and a form for
3090 your doctor to fill out [see Physician Referral Letter and the ePARmedX+] that you can print off or email to your
3091 doctor, so that they can evaluate whether to give you clearance to participate in at home, unsupervised physical
3092 activity using the Down Dog apps. When you receive the completed form, you can scan or take a picture of this
3093 form (with your doctor's signature) and send it to our email, kin.copetrial@ubc.ca, along with the signature page of
3094 the ePARmedX+ form. We will then setup another telephone appointment for you to continue with the consent form
3095 and rest of the study. You will be reimbursed for any cost associated with your physician filling out the form, as
3096 long as you provide us with the receipt."
3097

3098 *Skip To: End of Survey If Say: "On the basis of your ePARmedX+ responses, you need to talk with your doctor*
3099 *before you star... Is Displayed*

3100
3101

3102
 3103 **Q8 If the participant is cleared for participation** in physical activity **via PAR-Q+ or ePARmedX+ , say the**
 3104 **following:** “If you answered no honestly to all PAR-Q+ (and/or ePARmedX+ questions, where appropriate), you
 3105 can be reasonably sure that you can participate in this study”. "Thank you for those answers. That is all of the
 3106 eligibility questions and you are eligible for the study. Do you now have time for me to take a moment and go over
 3107 the study in some more detail?"

3108 Yes

3109 No (participant no longer wants to participate)

3110 No (participant needs to reschedule to go over the consent form, but wants to participate).

3111

3112 *Skip To: End of Survey If If the participant is cleared for participation in physical activity via PAR-Q+ or*
 3113 *ePARmedX+, say... = No (participant no longer wants to participate)*

3114

3115

3116 *Display This Question:*

3117 *If If the participant is cleared for participation in physical activity via PAR-Q+ or ePARmedX+, say... = No*
 3118 *(participant needs to reschedule to go over the consent form, but wants to participate).*

3119

3120 Q26 Please let me know when we can ‘rearrange’ a phone call so that we can complete the consent form. [Record
 3121 time and contact details to rearrange]

3122 _____

3123 _____

3124 _____

3125 _____

3126 _____

3127 _____

3128 *Skip To: End of Survey If Condition: Please let me know when we ... Is Displayed. Skip To: End of Survey.*

3129

3130

3131

3132 Q40 At this point I will go over some key points of the study and answer any questions you may have. Can you
 3133 open the consent form we emailed you initially and follow along with me? That’s great. The first page are the
 3134 primary members of the study who have designed and organized the study. Dr. Gosselin Boucher and Brook Haight
 3135 will be your primary contacts for the study should you have any questions or concerns beyond this phone call and
 3136 throughout your participation. You can reach both of them at kin.copetrial@ubc.ca, the email address on our
 3137 website and in the consent form.

3138 As part of this study, you will be invited to complete an on-line baseline questionnaire that will take about 20 mins
 3139 to complete. After you’ve completed that questionnaire, you will be randomized to one of two conditions, either an
 3140 exercise group or a waitlist control group. A research assistant will contact you to let you know which condition you
 3141 are in.

3142

3143 If you are randomized to the exercise group, you will receive a free one-year membership to the Down Dog apps
 3144 immediately. A research assistant will email you with a step-by-step guide on how to download and access the apps

3145 using the account we create for you. You will be asked to use any app except for the meditation app to complete 4
 3146 20-minute workouts a week for 12 weeks. Additionally, you will be asked to answer a short 15-minute survey every
 3147 2 weeks during the 12 weeks. Every time you complete a survey you will be entered into a draw to win one of two
 3148 Apple watches, or 1 or 20 gift cards valued at \$100. After the 12 weeks you may or may not be invited to participate
 3149 in individual interviews and group discussions where you will be asked to provide your feedback on the trial.
 3150 Participants who are involved in these interviews will receive \$35 compensation. At 24 weeks we will send you one
 3151 last survey to complete.

3152
 3153 If you are randomized to the waitlist control condition, you will be asked to maintain your pre-study activity levels
 3154 and routine for the first 12 weeks of the study. During these 12 weeks you will be asked to complete a short 15-
 3155 minute survey assessing your health and wellbeing every two weeks. Every time you complete a survey you will be
 3156 entered into a draw to win one of two Apple watches, or 1 or 20 gift cards valued at \$100. After the 12 weeks, you
 3157 will receive a free one-year membership to the suite of Down Dog apps to you as you wish. 24 weeks after you were
 3158 randomized to the waitlist control condition, you will be asked to complete one final survey.

3159
 3160 There are risks associated with the study. They are to do with exercise and are no different than if you were starting
 3161 exercise on your own or at a gym. We have people complete the PAR-Q+ to ensure they do not have higher risk
 3162 associated with starting exercise, and we have tips and information on how to reduce the risk of injury further, such
 3163 as warming up and keeping your workout area free of debris. To read about the risks in more detail, consult the
 3164 consent form, and let us know if you have any questions at any time.

3165
 3166 -----

3167

3168 Q41 I want to remind you that your participation is 100% voluntary and you can withdraw at any time. There are
 3169 more details regarding that process in the consent form. All of your data will also remain confidential, stored on
 3170 secure servers and encrypted. At the completion of the study, all data will be de-identified (no data can be linked
 3171 back to you personally), and there is no risk of being publicly identified with the study from the dataset.
 3172

3173 Lastly, we'll discuss randomization [*direct them to infographic about importance of participation - sent with*
 3174 *consent form*]. Every group in this study plays a valuable part. We need individuals to participate in all groups,
 3175 especially the waitlist control group. The waitlist control group is the most necessary group in the study as it allows
 3176 us to make comparisons. Remember if you are randomized to either the exercise group or the waitlist control group,
 3177 we need you to fill out all the surveys in order to have the study go smoothly. Further, if you are in the waitlist
 3178 control group, you will still receive free access for use of the apps for 1 year. Additionally, if you are randomized to
 3179 the exercise group, we need you to continue with the assigned group only so that we can determine what is actually
 3180 beneficial to people or not. That being said, the most important are the surveys to complete every two weeks,
 3181 regardless of whether you completed your exercise activities or do something outside of the study. We need the
 3182 surveys to be completed fully and as honestly as possible. Regardless of which group you are randomized to, for
 3183 every survey you complete, your name will be placed in a draw for the chance to receive either 1 of 2 Apple
 3184 Watches or 1 of 20 100\$ gift cards to your preferred choice of company from a range of companies. That is the
 3185 information we use to determine how beneficial and feasible the design of our study is. Do you see yourself being
 3186 able to complete all the surveys throughout the study?

3187 Yes (1)

3188 No (2)

3189

3190 *Skip To: Q18 If I want to remind you that your participation is 100% voluntary and you can withdraw at any time...*
 3191 *= No*

3192

3193 -----

3194

3195 Q13

3196 So, I have now told you about what your participation will entail, which is also described more fully in the
 3197 Consent Form. Would you like to participate in the study?"

3198 Yes (1)3199 No (2)

3200

3201 *Skip To: End of Survey If So, I have now told you about what your participation will entail, which is also described*
 3202 *more... = No*

3203

3204

3205

3206 Q15 **Say** "That's great. Before we can enroll you, I need to have you complete a participant consent form. I will
 3207 now email you a link that directs you to our consent form." *[email individual with link to consent form on*
 3208 *Qualtrics]* **Say** "Please carefully read this form and if you consent to participate, please answer the questions and
 3209 sign at the end. This is the same form as has been sent to you before, just in a different format for ease of signing.
 3210 Of course, if you have any questions about participating I will be staying on the phone so please just ask". **(Note:**
 3211 ***the research assistant stays on the phone with them as they complete this consent form and is at hand to answer***
 3212 ***any questions).***

3213 **Once they have signed, say:** "you will receive an email with a link to a PDF of the signed consent form. Please
 3214 open the link and download the PDF so it's stored locally on your computer as the link expires in 6 months."
 3215

3216

3217

3218

3219

3220 Q26

3221 If consented SAY "That's great. Thanks for agreeing to participate. I am sending you an email with a personalized
 3222 link that will take you to your first (baseline) questionnaire. Are you able to complete this now? If not, I will
 3223 schedule a follow-up call. It requires approximately 20 minutes.
 3224

3225

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3237

Display This Question:

3231 *If If consented SAY "That's great. Thanks for agreeing to participate. I am sending you an email wit... = No*

3232

3233 Q42

3234 Say: "No problem. When would be a good date/time we can schedule the follow up call to let you know what group
 3235 you've been randomized to and provide you with further instruction?"

3236 Arrange a date/time when they will have completed the survey to tell them about randomization. **[Record date/time**
 3237 **and contact details]**

3238 _____

3239 _____

3240 _____

3241 _____

3242 _____

3243 _____

Skip To: End of Survey If Condition: Say: "No problem. When... Is Displayed. Skip To: End of Survey.

3244 _____

3245 _____

3246 -----

3247 -----

3248 Q43 Are you available for a 15–20-minute phone call once you complete the baseline questionnaire to let you know

3249 what group you've been randomized to and give you further instruction?

- 3250 Yes (4)
- 3251 No (5)

3252 _____

3253 _____

3254 -----

Display This Question:

If Are you available for a 15-20 minute phone call once you complete the baseline questionnaire now... = No

3257 Q44

3258 Say: "When would be a good date/time we can schedule that follow up call?" Arrange a date/time when they will

3260 have completed the survey to setup their Down Dog account. **[Record date/time and contact details]**

3261 _____

3262 _____

3263 _____

3264 _____

3265 _____

3266 _____

Skip To: End of Survey If Condition: Say: "No problem. When... Is Displayed. Skip To: End of Survey.

3268 _____

3269 -----

3270 -----

3271 Q17 **SAY** "Do you have any additional questions for me?" **If YES, answer questions. If NO, say the following:**

3272 "Thank you very much for your interest and support of this project and of research being conducted at the University

3273 of British Columbia. I will call you back in about a half hour after you've completed the baseline questionnaire. Talk

3274 to you soon!"

3275 -----

3276 *Skip To: End of Survey If SAY "Do you have any additional questions for me?" If YES, answer questions. If NO,*

3277 *say the fol... Is Displayed*

3278
3279

Display This Question:

If This study involves taking part in a physical activity program online. Do you have access to the... = No

Or Or Please tell me how old you are? Text Response Is Greater Than 64

Or This question is about leisure time physical activity, so activity you do outside of work. Can yo... = Almost daily, that is five or more times a week, I did some moderate activity such as brisk walking, swimming, or riding a bike for 30 minutes or more each time. Or about once a week, I did some moderately difficult chores or played team sports for 2 hours or more.

Or This question is about leisure time physical activity, so activity you do outside of work. Can yo... = About three times a week, I engaged in a regular program of physical fitness involving some kind of heavy or vigorous physical activity such as running or riding hard on a bicycle for 30 minutes or more each time. Or I did chores such as heavy gardening or played active sports such as handball or singles tennis for 60 minutes or more each time.

Or This question is about leisure time physical activity, so activity you do outside of work. Can yo... = Almost daily, that is, five or more times a week, I engaged in a regular program of physical fitness involving some kind of heavy or vigorous physical activity for 30 minutes or more each time.

Or Are you able to read and understand English at the level necessary to fully understand what you w... = No

Or Are you currently retired? = Yes

Or You could be randomized to any of the groups, yoga, HIIT, combination, or the waitlist control. A... = No

Or I want to remind you that your participation is 100% voluntary and you can withdraw at any time.... = No

Or SAY: "In order to clear you for exercise, you have the option to speak with our certified exercis... = I no longer want to participate

Or Approximately how long did your symptoms last? = I still have symptoms

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Q18 If the participant does not meet the inclusion criteria (e.g., due to scoring on the L-Cat, is not older than 18, does not work at PHC, is retired, is not able to obtain clearance from the participant's physician via the PARmed-X+), SAY: "Unfortunately it is important that all participants meet the study's inclusion criteria, and **(insert reason for not meeting inclusion criteria)** means that I can't include you in the study at this time. Thank you very much for your interest and support of this project and of research being conducted at the University of British Columbia, we look forward to your involvement in future projects".

NOTE: If the participant is **excluded due to scoring 4-6 on the L-Cat**, then say:

"Unfortunately, you do not meet the study's inclusion criteria, by virtue of exceeding the threshold for weekly physical activity participation (the study is designed to target low active adults in particular), we are unable to enroll you in the study and provide questionnaire data. That is actually a great thing, and we hope you continue your active

3292 lifestyle" **SAY** "Thank you very much for your interest and support of this project and of research being conducted
3293 at the University of British Columbia".
3294 -----

3295 Page Break _____

3296
3297 **End of Block: Default Question Block**

3298 _____

3299

3300

3301 **12.7 Phone script for randomization**3302 **Phone Script for Randomization of Participants to Condition**

3303

3304 Note: This is the randomization phone call that occurs 30 minutes after the initial screening call (or later if the
 3305 participant needs to schedule it for a different time). Participants cannot be assigned to a condition until after they
 3306 have completed the baseline questionnaire.

3307

3308 **1. [Have you received an email notification that the participant completed the baseline questionnaire?]**

3309

3310 **[IF NO] Call participants and say:** Hi again, it's {RA's name} from the University of British Columbia's COPE
 3311 HCW Trial. I noticed that you haven't had a chance to complete the baseline survey that we sent you. Unfortunately,
 3312 we cannot continue to move forward with the study until you have a completed this survey. Do you have time to
 3313 complete the survey now while I remain on the phone? **[If you reach the answering machine, please use the**
 3314 **answering machine script on page 2].**

3315

3316 **[IF YES].** That is great. The link was sent to you prior to your initial phone call. The email will indicate
 3317 this it is a link for your baseline survey. Can you find that link?

3318

3319 **[IF NO]** That is okay. We will send it to you again. Please hold for 5 minutes while I send that
 3320 email. Please let me know when you receive it. *[IMMEDIATELY message Vincent/Brook on both*
 3321 *Teams and at kin.copetrial@ubc.ca to let them know that they need to send the baseline survey*
 3322 *link again. Include the participants ID and email address in your message].*

3323

3324 **[IF YES]** Great. Please click on that link now and complete the survey honestly. I will remain on
 3325 the phone in case you have any questions *[remember to only clarify instructions for them, if*
 3326 *needed].*

3327

3328 **[ONCE SURVEY IS COMPLETED]** Thank you for taking the time to complete that survey.
 3329 Before providing you with further instruction, I now need to determine whether you have been
 3330 randomly assigned to the waitlist control or exercise condition. Can you remain on the phone
 3331 while I do this? *[If no, say you will call back in 5 minutes after it is done].* Great thank you.

3332

3333 *[Take this time to reveal which condition they have been assigned to. Remember this cannot be*
 3334 *done until you are positive that they have completed the baseline survey (you will receive an email*
 3335 *notification with their participant ID when the survey has been completed). Make a mental note of*
 3336 *which condition they have been assigned to so that you can follow the script accordingly. If they*
 3337 *have been assigned to the exercise condition, please take this time to log into their account and*
 3338 *program the free access code].*

3339

3340 *[After you finish the above steps: skip to '1. Condition assignment – answers phone'. Do not*
 3341 *reintroduce yourself – i.e., start at the second sentence].*

3342

3343 **[IF NO]** That is okay. When would be another time that we could reschedule this call for after you have
 3344 had a chance to complete that survey? *[Note the date and time that they provide and email this information,*
 3345 *with the participant ID and email, to kin.copetrial@ubc.ca].* Great. Our team will be in touch to confirm
 3346 your new phone call time. Please make sure that you have completed the baseline survey before that
 3347 appointment. Have a great day and thank you again for your time. *[Hang up]*

3348

3349 **[IF YES]** *[Right before you call the participant (and no sooner than this), please take the time to reveal which*
 3350 *condition they have been assigned to. Remember this cannot be done until you are positive that they have completed*
 3351 *the baseline survey (you will receive an email notification with their participant ID when the survey has been*
 3352 *completed). Make a mental note of which condition they have been assigned to so that you can follow the script*
 3353 *accordingly. If they have been assigned to the exercise condition, please take time **directly** before the call to set up*
 3354 *their Down Dog account. That is, you will need to sign up their account and program the free access code. After*
 3355 *doing this please proceed to '1. Condition assignment'.*

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1. **Condition assignment:**

[Answering machine] Hi again, it's {RA's name} from the University of British Columbia's COPE HCW Trial. We had a scheduled phone call with [person's name] at [time]. I will call back in 10 minutes, and if we can't get in touch, a project coordinator will be in contact through email to reschedule. Please make sure that you have completed the baseline questionnaire prior to the scheduled call. Thanks very much. Have a great day."

[Answers phone] Hi again, it's {RA's name} from the University of British Columbia's COPE HCW Trial. Thank you for completing the baseline survey, and please note your name has been added to the draw for the prizes. Now that the survey is complete, I would like to inform you that you have been randomized to the {exercise/ waitlist control} group. I will be providing you with future instructions, do you have a somewhere you can take notes?

[Wait for them to say they have means to take notes]

[If randomized to the waitlist control group]

So, for the next 12 weeks we ask that you continue to perform your normal routine and keep your current activity levels as they are. Every two weeks, on Friday mornings, you will be emailed a similar but shorter version of the survey you just completed online so that we can track your wellbeing and health. This will be emailed to you every other Friday from the cope trial email address which is kin.copetrial@ubc.ca. We ask you to please complete this survey every two weeks, even though you are not yet being provided access to the apps for another 12 weeks. By completing the survey every two weeks for the next three months, you are helping us ensure the integrity of the study and the results. It is important that you are honest about how you are feeling and your health when you complete the survey. Also, as a reminder, every time you complete the survey in the next 12 weeks, your name will be entered into the draw for 1 of 2 Apple Watches and 1 of 20 \$100 gift certificates. We will contact you by phone at the end of the 12 weeks to setup your Down Dog app account and provide you with free one-year access to the whole suite of apps. Just a quick reminder that 12 weeks after you are provided access to the apps, we will send you one final survey to complete. Do you have any questions?

[IF YES] Answer them.

[IF NO] Great. We will be in touch. Don't hesitate to contact us at kin.copetrial@ubc.ca. That email address can be found in the consent form, or you can always reply to one of the previous emails we sent you. Take care {participant's name}. **END.**

[If randomized to the exercise group]

So, for the next 12 weeks we ask that you complete 4 20-minute workouts a week using the Down Dog suite of apps. Your 12 weeks of exercise will begin **this Sunday**. You can use the apps before this Sunday, but we will start recording your progress starting on Sunday.

[Note: If you are making this call on a Sunday, please ask them if they would like to begin today or next Sunday. Make note of this so you can enter their start date in the Excel file. If they choose to start that same day, please message Brook/Vincent on Teams and kin.copetrial@ubc.ca to let them know to send follow-up materials ASAP].

Every two weeks, on Friday mornings, you will be emailed a similar but shorter version of the survey you just completed online so that we can track your wellbeing and health. This will be emailed to you every other Friday from the cope trial email address. By completing the survey every two weeks for the next three months, you are helping us ensure the integrity of the study and the results. It is important that you are honest about how you are feeling and your health when you complete the survey. Also, as a reminder, every time you complete the survey in the next 12 weeks, your name will be entered into the draw for 1 of 2 Apple Watches and 1 of 20 \$100 gift certificates.

3411 Also, we may contact you by email at the end of the 12 weeks to invite you to participate in an interview or
 3412 focus group. 24 weeks from now we will contact you one last time to ask you to complete a follow-up survey.
 3413 Do you have any questions?

3414
 3415 **[IF YES]** *Answer them.*

3416 **[IF NO]** *Continue on.*

3417
 3418 To help you prepare for your use of the Down Dog suite of apps, I would like to guide you through setting it up
 3419 on your phone or computer. Down Dog is actually a suite of apps, including a separate app for yoga, running,
 3420 high intensity interval training (or HIIT), and barre. For this study, we are asking you to use any of the apps to
 3421 complete your 4 weekly workouts, that is, for each workout you have the option of which app to use. Down
 3422 Dog also has a meditation app, but we do not consider it to be part of this study and we ask you to complete 4
 3423 workouts per week using the apps that allow for movement of your body. If you do want to use the meditation
 3424 app, please wait 24 weeks before downloading and using it.

3425
 3426 First, do you think you will more likely use your mobile phone to complete your 4 weekly workouts or your
 3427 computer?

3428
 3429 *[Keep this in mind and follow the script accordingly]*

3430
 3431 Great! We have already set up your account with one of our own lab email accounts, so that your name can
 3432 remain anonymous to the app developers and so that we could program the free access code. We also plan to
 3433 review your workouts every week through our access to the platform.

3434
 3435 I am now going to walk you through how to download and sign into all 4 of the apps that you can use - yoga,
 3436 HIIT, running, and barre. This is to ensure that you can access each of the apps with no problems. We will also
 3437 be emailing you a document summarizing these steps.

3438
 3439 To start, can I ask you to please take note of your Down Dog log in information? *[Read out Down Dog email*
 3440 *and password – make sure that they write it down].*

3441
 3442 **2. Downloading and signing into apps:**

3443
 3444 **[IF MOBILE OR TABLET USE]**

3445 When you use Down Dog on your phone, you need to install each of the apps – yoga, HIIT, running, and barre
 3446 – separately. I will start with walking you through how to download the yoga app. To start, please open the app
 3447 store on your phone/tablet. In the search bar type “Down Dog Yoga”. The first search result, usually after an
 3448 ad, should say “Yoga | Down Dog” next to a blue icon with a white dog stretching. Select “get” (apple) or
 3449 “install” (android) for the app to download to your device.

3450 *Wait for download.*

3451 Go to the app icon on your device and click to open. You should see a page with an option to log in with
 3452 Gmail, Facebook, or Email and Password.

3453 In the email you’re going to type in {participant’s study email address} and this password {password}. Now
 3454 click submit.

3455
 3456 *[Make sure that the log-in worked and they can see the main home page]*

3457
 3458 Great. I am now going to get you to download and log into the high intensity interval training (or HIIT) app.
 3459 Note that this app is called high intensity interval training, however, your workout does not need to be intense,
 3460 and it can be programmed to be at a pace that is comfortable for you. Please return to the app store on your
 3461 phone/tablet. In the search bar type “Down Dog HIIT” *(make sure they use two ‘I’s in HIIT)*. The first search
 3462 result, usually after an ad, should say “HIIT | Down Dog” next to a blue icon with a white dog lifting weights.
 3463 Select “get” for the app to download to your device.

3464 *Wait for download.*

3465 Go to the app icon on your device and click to open. You should see a page with an option to log in with
 3466 Gmail, Facebook or Email and Password.

3467 In the email you're going to type in {participant's study email address} and this password {password}. Now
3468 click submit.

3469
3470 *[Make sure that the log-in worked and they can see the main home page]*
3471

3472 Great. We are now going to do the same process but for the running app. I know this is repetitive, however, it
3473 is important that we know that you can access all the apps that are available to you for this study. Note that
3474 although this is a running app, it also provides the option of jogging and walking, so that you can exercise at
3475 your own pace. Please return to the app store on your phone/tablet. In the search bar type "Down Dog
3476 Running". The first search result, usually after an ad, should say "Running | Down Dog" next to a blue icon
3477 with a white dog marching. Select "get" for the app to download to your device.

3478 *Wait for download.*

3479 Go to the app icon on your device and click to open. You should see a page with an option to log in with
3480 Gmail, Facebook or Email and Password.

3481 In the email you're going to type in {participant's study email address} and this password {password}. Now
3482 click submit.

3483
3484 *[Make sure that the log-in worked and they can see the main home page]*
3485

3486 Awesome. I will now get you to download the final app that we are using for this study, the barre app. Please
3487 return to the app store on your phone/tablet. In the search bar type "Down Dog Barre". The first search result,
3488 usually after an ad, should say "Barre | Down Dog" next to a blue icon with a white dog extending its leg.
3489 Select "get" for the app to download to your device.

3490 *Wait for download.*

3491 Go to the app icon on your device and click to open. You should see a page with an option to log in with
3492 Gmail, Facebook or Email and Password.

3493 In the email you're going to type in {participant's study email address} and this password {password}. Now
3494 click submit.

3495
3496 *[Make sure that the log-in worked and they can see the main home page]*
3497

3498 **[IF LAPTOP/DESKTOP USE]**

3499 When you use Down Dog on your laptop or desktop, you can access all 4 apps – yoga, HIIT, running, and
3500 barre – on the same webpage. I will begin by walking you through how to access the yoga application. To start,
3501 open up your preferred web browser (Chrome, Safari etc.). Type in the address bar "downdogapp.com" and
3502 click enter. You should be at a webpage with the words "Great Fitness Anywhere" and with a list of apps under
3503 those words. *Ensure they are at the correct webpage.*

3504 Now select "Yoga" from the list on the left. Beside the image of the iPhone, click on "start". You should be
3505 brought to a page with an option to log in with Gmail, Facebook or Email and Password.

3506 In the email you're going to type in {participant's study email address} and this password {password}. Now
3507 click submit.

3508
3509 *[Make sure that they wrote down their email and password for their notes] [Make sure they were able to sign*
3510 *in properly and can see the yoga home page]*
3511

3512 Great. I am now going to get you to log into the high intensity interval training (or HIIT) app. Note that this
3513 app is called high intensity interval training, however, your workout does not need to be intense, and it can be
3514 programmed and completed to be at a pace that is comfortable for you. To start, return to the Down Dog home
3515 page by clicking on the words 'Down Dog' on the upper left-hand corner of your screen. *(Note the yoga*
3516 *application may have opened in a new tab and to return to the home page they may just need to exit that new*
3517 *tab and return to the original one).*

3518 Now select "HIIT" from the list on the left. Beside the image of the iPhone, click on "start". You should be
3519 brought to a page with an option to log in with Gmail, Facebook or Email and Password.

3520 In the email you're going to type in {participant's study email address} and this password {password}. Now
3521 click submit.

3522

3523 *[Make sure they were able to sign in properly and can see the HIIT home page]*
 3524

3525 Great. We are now going to do the same process but for the running app. I know this is repetitive, however, it
 3526 is important that we know that you can access all the apps that are available to you for this study. Note that
 3527 although this is a running app, it also provides the option of jogging and walking, so that you can exercise at
 3528 your own pace. To start, return to the Down Dog home page by clicking on the words ‘Down Dog ‘on the
 3529 upper left-hand corner of your screen. *(Note the HIIT application may have opened in a new tab and to return
 3530 to the home page they may just need to exit that new tab and return to the original one).*
 3531 Now select “Running” from the list on the left. Beside the image of the iPhone, click on “start”. You should be
 3532 brought to a page with an option to log in with Gmail, Facebook or Email and Password.
 3533 In the email you’re going to type in {participant’s study email address} and this password {password}. Now
 3534 click submit.
 3535

3536 *[Make sure they were able to sign in properly and can see the running home page]*
 3537

3538 Awesome. I will now get you to log in to the final app that we are using for this study, the barre app. To start,
 3539 return to the Down Dog home page by clicking on the words ‘Down Dog ‘on the upper left-hand corner of
 3540 your screen. *(Note the running application may have opened in a new tab and to return to the home page they
 3541 may just need to exit that new tab and return to the original one).*
 3542 Now select “Barre” from the list on the left. Beside the image of the iPhone, click on “start”. You should be
 3543 brought to a page with an option to log in with Gmail, Facebook or Email and Password.
 3544 In the email you’re going to type in {participant’s study email address} and this password {password}. Now
 3545 click submit.
 3546

3547 *[Make sure they were able to sign in properly and can see the barre home page]*
 3548

3549 **3. Walking participants through the settings of one app:**
 3550

3551 You are now logged in to all 4 of the apps that you can use for this study. Thank you again for your patience.
 3552 Before ending this call, I want to show you some of the settings that you can modify when you use the Down
 3553 Dog apps. For sake of time, I will only explain the settings of one app, however, we will also email you step-
 3554 by-step instructions for each app.
 3555

3556 Which app do you think you will start using first? *[Walk them through the settings for this app – only walk
 3557 them through the settings for this one app – unless they request more instruction. We have worded the
 3558 instructions so that they are applicable for both phone and desktop use].*
 3559

3560 **[YOGA]** Great. Can you please return to the yoga application? *[Wait for them to get there]*. The initial home
 3561 screen allows you to personalize your practice. There are a variety of yoga practices to choose from under the
 3562 “Type” tab, such as restorative and cardio flow. You can choose your level of difficulty under the “Level” tab.
 3563 The “Boost” option allows you to add a specific exercise or focus to the practice, such as weight loss,
 3564 breathing, or hip stretches. The “savasana” tab refers to the lying rest that occurs at the end of many yoga
 3565 practices. You can choose the length of this rest or opt to remove it from your practice. You can set the pace of
 3566 your yoga practice under the “Pace” tab. It is important that you continually check in with yourself that you are
 3567 exercising at a comfortable pace. We ask that your workouts be at least 20 minutes in length, and you can
 3568 choose 20 minutes or more under the “Length” tab. If you are changing the length of the workout using your
 3569 phone, you will need to hold and drag the blue circle that encompasses the number of minutes shown on your
 3570 homepage. Dragging the blue circle clockwise will increase the length of your workout. There are other
 3571 customizable options on this homepage such as music, voice, and amount of instruction for you to explore.
 3572 Even if you do not change any of these features at any point, each time you complete a yoga practice, the series
 3573 of positions will change randomly because the Down Dog company has set it up so that each workout is
 3574 unique. You can change your practice in different ways each time you complete it, and you can also add
 3575 workouts to your favourite list if you particularly enjoyed it and want to complete it again at a later date. You
 3576 can find those saved workouts if you click the “History” tab near the bottom right **(if mobile)** or left-hand side
 3577 **(if desktop)** of your screen and then select “Favourites”. Remember, please discontinue exercise if at any time

3578 the yoga video is too difficult or too fast paced for you. At the completion of each workout with the app, you
3579 must press the EXIT button so that it is recorded on the app's cloud. Do you have any questions?
3580

3581 **[IF YES]** *Answer them.*

3582 **[IF NO]** Great.

3583
3584 **[HIIT]** Great. Can you please return to the HIIT application? *[Wait for them to get there]*. The initial home
3585 screen allows you to personalize and then start your workout. The "Mix" tab allows you to customize the focus
3586 of your workout. For example, you can choose the goal of your workout from a variety of different options
3587 such as total body shred, arm day, total body for bad knees, and cardio abs. You can also modify whether you
3588 would like your workout to have an aerobic focus and/or focus on a specific muscle group. Under this tab you
3589 will also be able to indicate whether you want to use equipment such as dumbbells, a chair, or resistance bands,
3590 although no equipment is required. Under the "Type" tab you can choose from a variety of well-known HIIT
3591 exercise types, which specify how often you repeat each individual exercise and in which order. A description
3592 of each type is provided for you. Using the tabs that show an upwards arrow, you can choose the difficulty
3593 level for upper and lower body exercises, as well as core. It is important that you continually check in with
3594 yourself that you are exercising at a comfortable pace. We ask that your workouts be at least 20 minutes, which
3595 you can change under the "Total Length" tab to be 20 minutes, or longer if you wish. If you are changing the
3596 length of the workout using your phone, you will need to hold and drag the blue circle that encompasses the
3597 number of minutes shown on your homepage. Dragging the blue circle clockwise will increase the length of
3598 your workout.
3599

3600 Music can be changed, or you can turn the in-app music off and listen to your own music through another app
3601 or with another device. You can choose which instructor you would like to follow under the "Video Model"
3602 tab. The voice of the instructor can also be changed under the "Voice" tab. You can also change the amount of
3603 instruction you receive under the "Explanation" tab. Lastly, there are a variety of timing options that you can
3604 change. For example, you can change the length of your warmup, the length of each exercise, the length of rest
3605 between exercises, and the length of your cooldown. Remember, although this app is called high intensity
3606 interval training, your workout does not need to be intense, and you should always program your workout to a
3607 level and pace that is comfortable for you.
3608

3609 You can change your workout in different ways each time you complete it, but even if you do not change any
3610 of these features at any point, each time you complete a HIIT workout, the series of exercises will change
3611 randomly because the Down Dog company has set it up so that each workout is unique. You can also add
3612 workouts to your favourite if you particularly enjoyed it and want to complete it again at a later date. Again,
3613 you can find those saved workouts if you click the "History" tab near the bottom right (**if mobile**) or left-hand
3614 side (**if desktop**) of your screen and then select "Favourites". Remember, please discontinue exercise if at any
3615 time the workout video is too difficult or too fast paced for you. At the completion of each workout with the
3616 app, you must press the EXIT button so that it is recorded on the app's cloud. Do you have any questions?
3617

3618 **[IF YES]** *Answer them.*

3619 **[IF NO]** Great.

3620
3621 **[RUNNING]** Great. Can you please return to the running application? *[Wait for them to get there]*. The initial
3622 home screen allows you to personalize and then start your workout. Remember, although this app is called
3623 running, you can also walk and jog, and you should always program your workout to a level and pace that is
3624 comfortable for you. Under the "Type" tab you can choose whether you want to complete your run on a
3625 treadmill or outside, and whether you want to run or walk and jog. Under the "Level" tab you can also choose
3626 the difficulty level which corresponds to the amount of sprints and breaks you want to include in your run. It is
3627 important that you continually check in with yourself that you are exercising at a comfortable pace. The
3628 "Focus" tab allows you to change the focus of your run, for example you can choose to focus on speed,
3629 endurance, or hills. Under the "Units" tab you can decide whether you want to record your distance in miles or
3630 kilometers. We ask that your workouts be at least 20 minutes, which you can change under the "Length" tab to
3631 be 20 minutes, or longer if you wish. If you are changing the length of the workout using your phone, you will
3632 need to hold and drag the blue circle that encompasses the number of minutes shown on your homepage.
3633 Dragging the blue circle clockwise will increase the length of your workout. Music can be changed, or you can

3634 turn the in-app music off and listen to your own music through another app or with another device. The voice
 3635 of the instructor can also be changed under the “Voice” tab. You can change your workout in different ways
 3636 each time you complete it, and you can also add workouts to your favourite if you particularly enjoyed it and
 3637 want to complete it again later. Again, you can find those saved workouts if you click the “History” tab near
 3638 the bottom right (**if mobile**) or left-hand side (**if desktop**) of your screen and then select “Favourites”.
 3639 Remember, please discontinue exercise if at any time the workout video is too difficult or too fast paced for
 3640 you. At the completion of each run with the app, you must press the EXIT button so that it is recorded on the
 3641 app’s cloud. Do you have any questions?

3642
 3643 **[IF YES]** *Answer them.*

3644 **[IF NO]** Great.

3645
 3646 **[BARRE]** Great. Can you please return to the barre application? *[Wait for them to get there]*. The initial home
 3647 screen allows you to personalize and then start your workout. Under the “Exercise Length” tab you can choose
 3648 the length of time you will do each individual exercise during the workout. The “Focus” tab allows you to
 3649 change the focus of your workout, for example you can choose to focus on total body, core strength, thighs,
 3650 glute strength, or thighs and glutes. We ask that your workouts be at least 20 minutes, which you can change
 3651 under the “Length” tab to be 20 minutes, or longer if you wish. If you are changing the length of the workout
 3652 using your phone, you will need to hold and drag the blue circle that encompasses the number of minutes
 3653 shown on your homepage. Dragging the blue circle clockwise will increase the length of your workout. Music
 3654 can be changed, or you can turn the in-app music off and listen to your own music through another app or with
 3655 another device. You can change your workout in different ways each time you complete it, and you can also
 3656 add workouts to your favourite if you particularly enjoyed it and want to complete it again later. Again, you
 3657 can find those saved workouts if you click the “History” tab near the bottom right (**if mobile**) or left-hand side
 3658 (**if desktop**) of your screen and then select “Favourites”. Remember, please discontinue exercise if at any time
 3659 the workout video is too difficult or too fast paced for you. It is important that you continually check in with
 3660 yourself that you are exercising at a comfortable pace. At the completion of each workout with the app, you
 3661 must press the EXIT button so that it is recorded on the app’s cloud. Do you have any questions?

3662
 3663 **[IF YES]** *Answer them.*

3664 **[IF NO]** Great.

3665
 3666 **4. Final instructions for participants:**

3667
 3668 I hope that this information has helped to make you feel more comfortable with the apps. Remember, for each
 3669 workout you can use whichever app you prefer (other than the meditation app), as long as you are completing
 3670 at least 4 20-minute workouts a week. Each time you use Down Dog, please make sure you are signed in using
 3671 the email and password we provided you today. Also, at the completion of each workout with the app, you
 3672 must press the EXIT button so that it is recorded on the app’s cloud. **This is very important.**

3673
 3674 There are a few things that I want to remind you about your use of these apps.

3675
 3676 First, while we ask you to complete 4 workouts per week at 20 minutes per week, any amount of exercise on a
 3677 weekly basis is good. We recommend that you schedule your workouts into your calendar every week, so that
 3678 you have a commitment to yourself and don’t get pulled into other activities instead of working out.

3679
 3680 Second, we are offering to you all 4 exercise apps, but we do not expect you to use all 4 if you do not want to.
 3681 If you only enjoy yoga, please feel free to only use the yoga app. And if HIIT is not your thing, don’t use it.
 3682 Research has shown that providing yourself with variety in your workouts will lead to greater enjoyment and
 3683 more workouts per week, but we will leave it to you to decide what you want to do to reach the 4 workouts per
 3684 week.

3685
 3686 You will also notice that the models in the apps are very fit and young, and move very quickly. We do not
 3687 expect you to move as quickly as the models - nor should you! The models have been working out probably
 3688 for a very long time and may have younger bodies. You should do the workouts at the intensities that are

3689 comfortable to you and if any movements feel uncomfortable, you should stop them. Of course, going from
3690 low activity levels to higher will be uncomfortable at times, so you will have to gauge your body accordingly.
3691

3692 We also recommend choosing shorter bursts (sometimes called ‘exercise length’) for each individual exercise,
3693 that last maybe 20 or 30 seconds each, with an equal length recovery time between the bursts. These settings
3694 can be altered on the ‘choose my practice’ home screen. For example, you can adjust your settings so that each
3695 individual exercise lasts 30 seconds with 30 seconds of recovery in-between exercises. If this is too easy as
3696 time passes, you can either increase the length of the bursts or reduce the recovery between the bursts. Of
3697 course, change your settings only if you feel comfortable with these changes.
3698

3699 We have included additional tips for beginning exercise on our website. We will also include some of these
3700 tips in the Down Dog instruction manual we send you.
3701

3702 Lastly, as we are using the app to track **your** physical activity, we ask that only **you** use the app. We
3703 understand that there may be family members or housemates that want to work out with you, but what we do
3704 not want is others using the app under your account without you there. In the weekly surveys we have a
3705 question about others using the app, please answer honestly if the app has been used by someone else during
3706 that week without you. Your honest answers are very important to the study. Do you have any questions?
3707

3708 **[IF YES]** *Answer them.*

3709 **[IF NO]** Great. Remember, your 12 weeks of exercise starts **this Sunday**. Every two weeks you will receive an
3710 email with a short survey link from the email kin.copetrial@ubc.ca. Remember don’t hesitate to contact us at
3711 kin.copetrial@ubc.ca if you have any questions, concerns or issues. We will send you your first check-in email
3712 and survey at the end of your first full week of app use. Thank you for your participation {participant’s name}.
3713 Take care. **END.**
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3719 **12.8 Initial contact email and biweekly emails**

3720

3721 Hello [interested person's name],

3722

3723 Thank you for your interest in the COPE HCW Trial!

3724 [Answer any questions interested person asked in original contact email].

3725

3726 To confirm eligibility and interest, we would like to setup a phone screening with you. Please reply to this email
3727 with some dates and times that work for you, as well as your preferred contact number. Please note, this phone call
3728 could take up to 60 minutes.

3729

3730 Sincerely,

3731

3732 The COPE HCW Research Team

3733

3734

3735

3736 **Biweekly Emails**

3737

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3739 Check-in biweekly survey:

3740

3741 Hello Participant X,

3742

3743 Your continued participation is valuable to the COPE HCW Trial, so please don't hesitate to reach out and speak
3744 with a member of the research team if you have any questions, concerns, or issues.

3745

3746 Please follow the link below to fill out a survey assessing your wellness and activity this month:

3747

3748 LINK

3749

3750 Thank you for your participation!

3751

3752 Sincerely,

3753

3754 The COPE HCW Research Team

3755

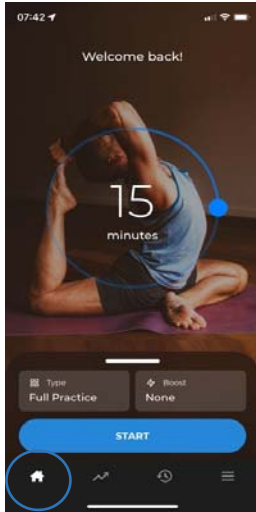
3756 **12.9 Down Dog Application General Specifications**

3757 Visual of the Yoga and HIIT app Home page on a mobile device showing multiple variabilities for exercise type,
3758 time, level, voice/music and breaks/break times.
3759

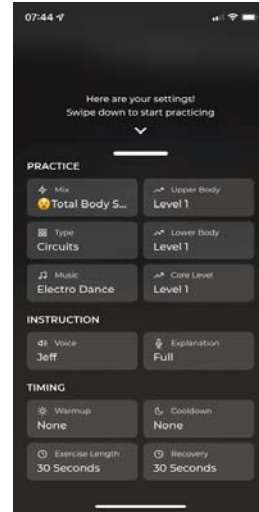
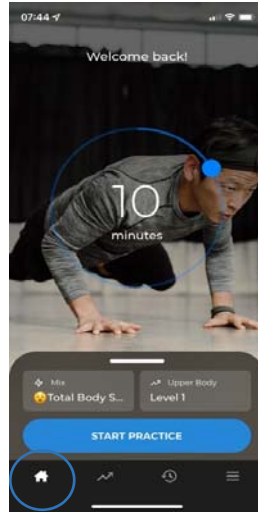
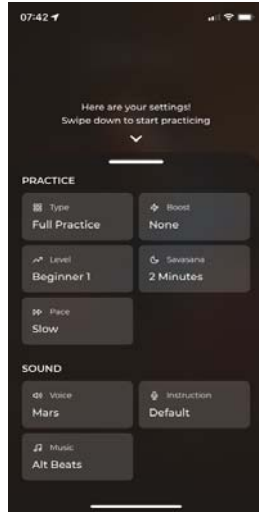
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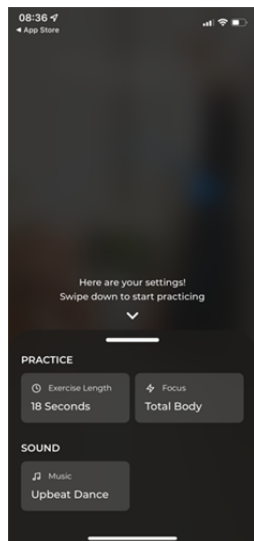
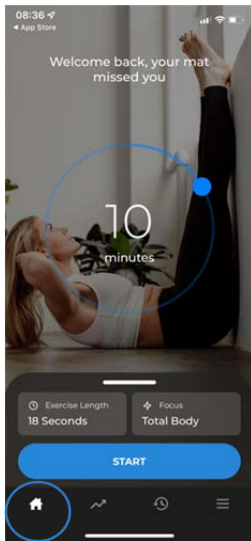
▼ Yoga



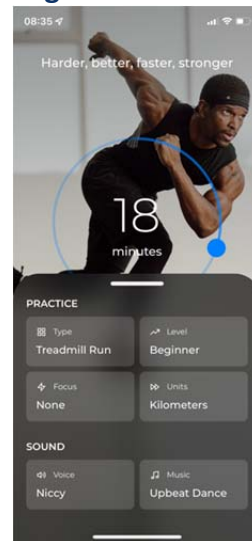
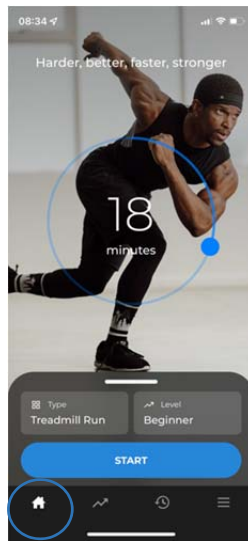
▼ HIIT



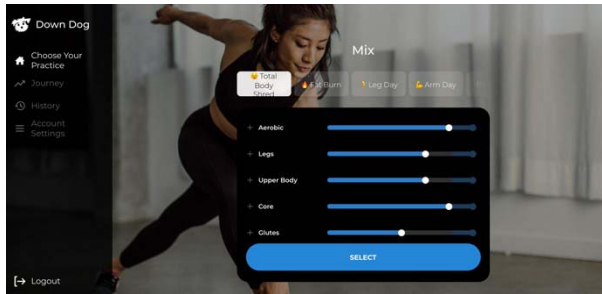
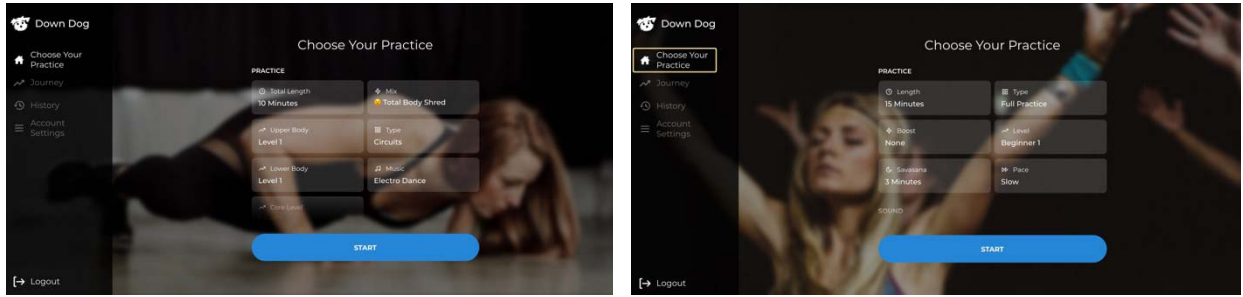
▼ Barre



▼ Running



3762 Visual of the Yoga and HIIT app Home page on a Web version (computer device) showing multiple
3763 variabilities for exercise.
3764
3765



◀ **HIIT**
Possibility to target certain parts of the body and according to the intensity

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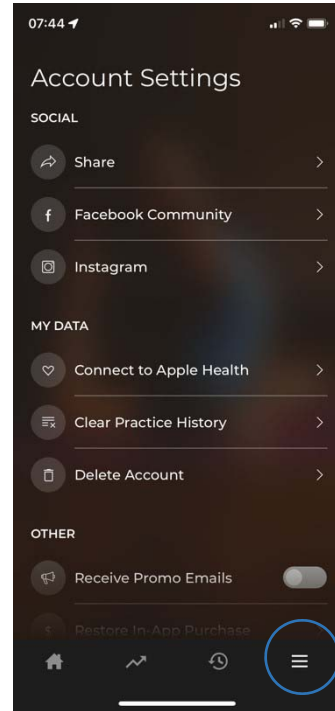
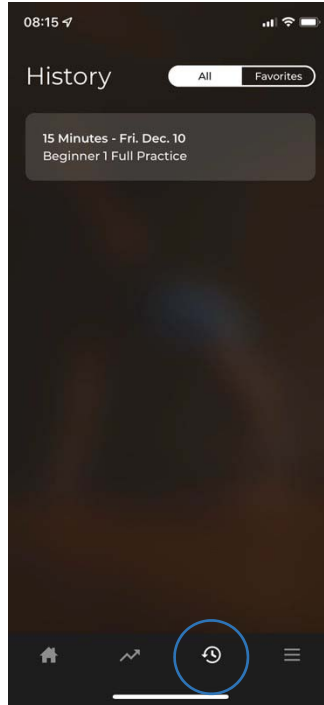
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Different tabs of the Yoga and HIIT app where it is possible to modify the goals and indicate them on a calendar, see the history of the workouts and those that have been identified as favorite and the possible settings for the user (e.g., activity sharing, health apps in the cell phone or computer).

▼ **Journey and Goals**

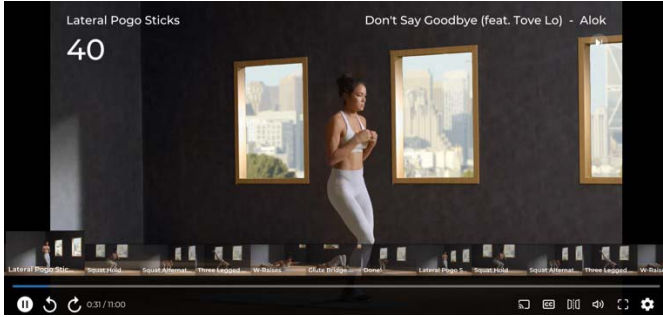
▼ **History train ings**

▼ **Settings**

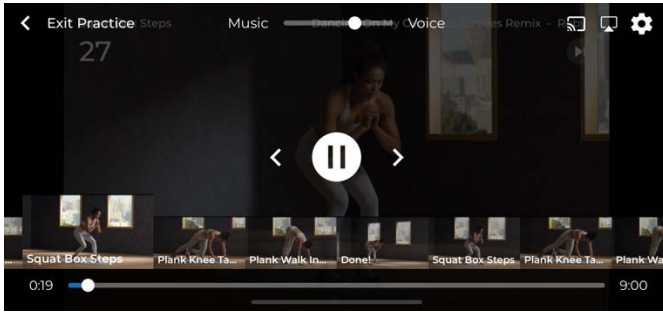


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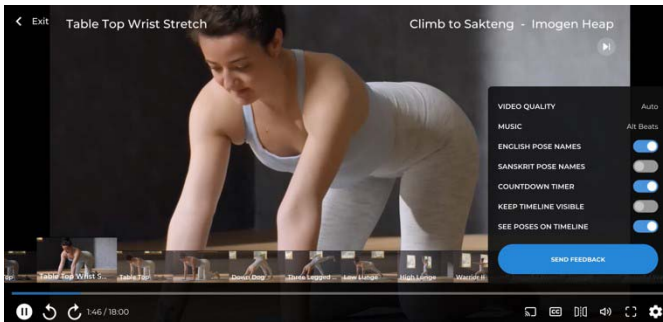
Visuals of the workouts on mobile or web version showing the interface possibilities (e.g., sounds, display on a TV) for the Yoga and HIIT application.



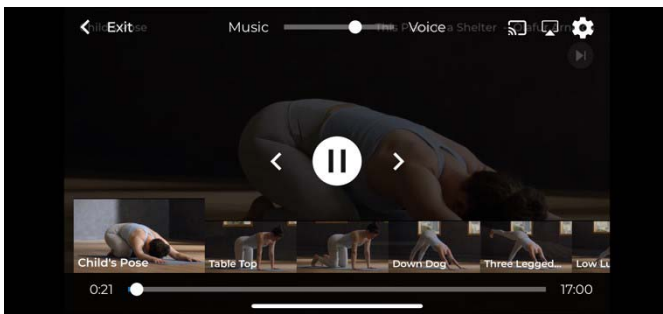
HIIT
Web version



HIIT
Mobile version



Yoga
Web version



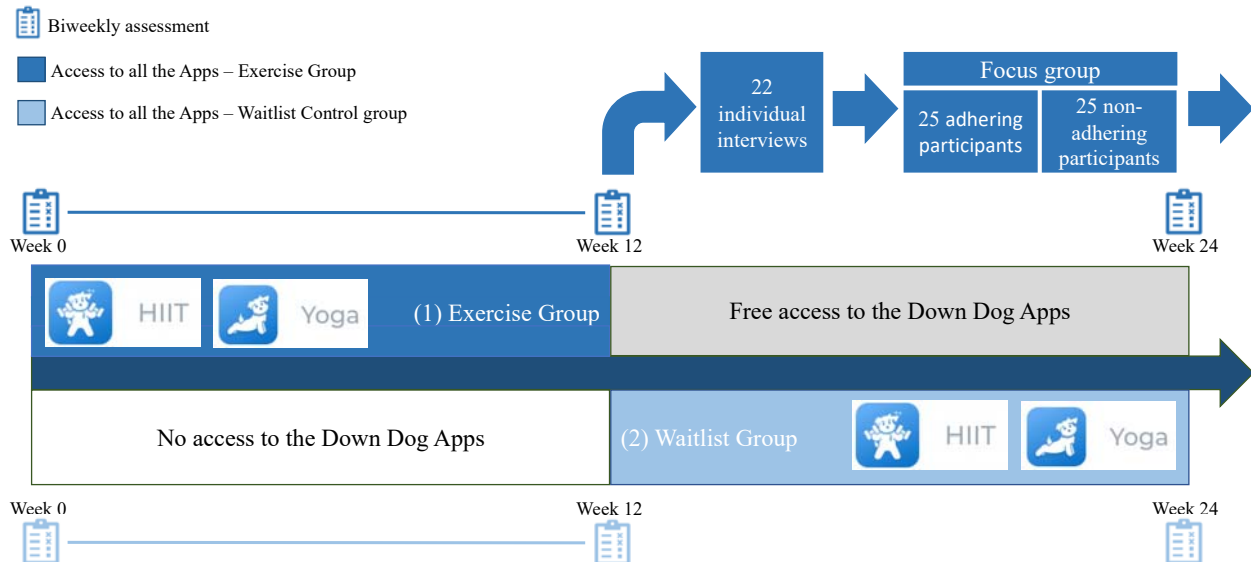
Yoga
Mobile version

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3798 **12.10 Description of activities in each arm**

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Figure 1. Timeline of the COPE HCW trial**Initial telephone screening and consent:**

- After signing up for the study, a member of the research team will call the participant for an initial telephone screening to ensure that he/she is eligible.
- If the participant is eligible for the study, we will review the entire study with them and go over the consent form.

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Baseline questionnaire and randomization:

- If the participant consent to participate, he/she will be directed to a website to complete the survey about their current state of wellbeing and health.
- In a similar manner to flipping a coin, participant will then be randomly assigned to one of two groups: (1) exercise group or (2) waitlist group.

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Weeks 1 – 12:

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(1) Exercise group:

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(2) Waitlist group:

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- For the duration of the study, participant will be completing any of the physical activities customizable within the Down Dog apps. He/she will be asked to complete a minimum of four 20-minute workouts per week.
 - Research staff will set up a study email address for them and their account on the Down Dog site, to ensure the anonymity throughout the study and allow us to download the weekly exercise data for the purposes of the study. We will also guide them through how to download and use the suite of apps to their mobile devices or tablets.
 - Every two weeks, participant will receive a survey to complete.
- For the 12 weeks of the study, participant will be asked to continue their typical, pre-study daily and weekly routine, maintaining the physical activity he/she was completing before the start of the study.
 - At the end of the 12-week study, the participant will get access to the Down Dog apps to complete any of the offered physical activities. The membership will also be free for one year.

- 3834
- Every two weeks, the participant will receive a survey to complete.

3835 Individual interviews at week 12:

3836 If participant is randomized to the exercise group, he/she may be invited to participate in the post-intervention
3837 individual interview in Week 12. Participant will be asked to commit 30-90 minutes to an online or in-person
3838 discussion with one of our research assistants to discuss their use of the apps and participation in the study.

3839

3840 Week 24:

3841 (1) Exercise group:

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- Participants have an additional 1 year of access to the Down Dog app that may use as they wish.

3843

- At week 24 (12 weeks after their initial 12-week participation in the study), participant will receive a
3844 check-in email with the final survey to complete.

3845

- We will also record the use of the apps at week 24.

3846

3847 (2) Waitlist group:

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- Participant will receive a free one-year membership to the suite of Down Dog apps to use as they wish
3849 at the end of the first 12 weeks. We will set up their accounts for them, so that we can monitor their
3850 workouts on a weekly basis.

3851

- At the end of the first 12 weeks that he/she have access to the suite of apps (i.e., 24 weeks following
3852 their randomization to the waitlist control group), participant will receive a check-in email with the
3853 final survey to complete.

3854 Focus groups at week 24:

3855 A random group of participants will be invited to participate in a series of focus group discussions, where we will
3856 present our results from the individual interviews to get their feedback. If invited, participant will be asked to
3857 commit 90-120 minutes to these discussions.

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Summary of amendment to the original protocol

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- a) Sample size changed from $n = 560$ (357, accounting for possibility of nesting or for creation of nine dummy variables to covary locations, as well as 20% attrition) to $n = 428$ (357, accounting for 20% attrition rate).

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3882

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Effect of change on study results: The trial will not be sufficiently powered to detect small effects, but will be well powered to detect small-to-medium and medium sized effects.

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3885

- b) We added booths at Saint Paul and Mount Saint Joseph hospitals to inform healthcare workers of the study.

3886

Prospective participants will be able to receive information and register online for the screening interview.

3887

We will be obtaining permission from the hospitals to set up the booths and we will follow hospital

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protocols in relation to COVID-19. This amendment was approved by the University of British Columbia's

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Behavioural Research Ethics Board and by Providence Health Care's Institutional Ethics Board on June 10,

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2022

3891

3892

Changes to the trial

3893

1. Description of change: *Sample size changed from $n = 560$ (357, accounting for possibility of nesting or for creation of nine dummy variables to covary locations, as well as 20% attrition) to $n = 428$ (357, accounting for 20% attrition rate).*

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a. Rationale: *UPDATE (July 4, 2022) – Prior to study recruitment, we sought to include 560 underactive 18 or older adult participants. We selected $n = 357$ on the basis of a small effect size of .30, which, when adjusted for the possibility of nesting or for creation of nine dummy variables to covary locations, as well as a 20% attrition would lead to requiring 560 total in the study. As of July 4, 2022, $n = 388$ expressed initial interest in participating through squarespace, with $n = 282$ meeting the inclusion criteria and enrolled in the trial. Of the 282, 228 are women (87%) and 35 are men (13%). We are deciding to close recruitment of new participants for four main reasons. First, in the context of the Providence Health Care with a total population of ~13,000 employees, there was no precedent for how successful recruitment would be. Target participants are healthcare workers, who may have experienced greater stress and works demands since the beginning of the pandemic. Accordingly, it was possible that due to psychological state or lack of time, the population would have a lower interest or capacity to participate, and given there is only a pool of 13,000 to begin with, we had no idea how many would want to and be eligible to participate. In the months of April through to June, we have posted social media advertisements on Twitter and Instagram, as well as circulated the ads through email and Providence Health Care (PHC) locations. We have also conducted in-person recruitment booths at two PHC sites on four separate occasions. While we had significant interest at the start of the study, interest has significantly lessened since mid-May. This may be a result of less interest than initially expected in combination with early recruitment of those interested. Second, it is our belief that individuals' social and psychological experiences may be different now than in April, 2022, when recruitment started, perhaps impacting reported distress levels (e.g., psychological and social experiences may differ as Summer begins). By closing new enrollments at this point means that the sample participants will all have commenced the study at the same time of year (within an ~12-week window, predominantly all starting in the Spring of 2022). Third, although a sample of $n = 560$ was required to detect a small effect, accounting for the possibility of nesting which required creation of nine dummy variables to covary locations (thus 90 extra people required), we have discovered that 82% of the 282 enrolled participants work at one of the ten PHC sites. For that reason, we will be unable to examine and account for differences between PHC locations, reducing the number of participants required to detect an effect. Under the same parameters as originally presented (i.e., Power $(1 - b)$ set at 80%, and $p < .05$ with seven time points, a sample of $n = 203$ is/was required to detect a small-to-medium effect of $\delta = .40$ and a sample of $n = 131$ is/was required to detect a medium-sized effect of $\delta = .50$. Even after accounting for the original attrition rate of 20%, without requiring to nest within sites, a sample of $n = 264$ and 164 would be able to detect small-to-medium and medium effect sizes of .40 and .50 respectively. As there are/were no feasibility/efficacy data to sufficiently gauge the size of intervention effect in the context of a pandemic, we felt it was appropriate to cease new enrollments, while acknowledging that the trial may not be sufficiently powered to detect small effects, but will be well powered to detect small-to-medium and medium sized effects with the full sample. Fourth, an overall goal of the trial was to determine the feasibility of an intervention that could be broadly implemented and scaled up to support healthcare workers in Canada. In light of this, we felt that by completing the trial within the original timeframe (with the final 12-week data collected in October 2022), albeit powered against an effect size of $\delta = .40$ to .50 rather than $\delta = .30$, would enable us to disseminate information in a manner that will be able to inform health promotion efforts among the target population and allow for submission of a grant application to the Tri-Agency Council to extend the work without significant delays. We do not want to delay dissemination, given the fact that findings might prove important for knowledge translation efforts and shape future approaches by individuals and governments to manage the continued impact of COVID-19 on healthcare worker wellbeing and health. We felt that it was important (from a transparency perspective) to report this decision prior to the completion of data collection and data analysis.*