

1 **“This is going to stay”**: A longitudinal mixed method pilot study on the
2 **psychological impact of living through a pandemic**

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Abstract

Living through the COVID-19 pandemic has been proven to have psychological impacts among individuals in both sport and non-sport populations. However, there is little available research comparing athlete and non-athlete populations in this context, especially among a non-western sample. This study employs a novel, longitudinal mixed method sequential explanatory research design to compare the impact of the COVID-19 pandemic between athlete and non-athlete populations and the role of physical activity. Phase A was a quantitative study measuring the psychological impact using the Impact of Event Scale-Revised among both groups ($n=32$). Phase B was a qualitative study, with a sample ($n=7$) participating in experiential interviews, exploring the lived experiences of participants over a 7-month period since Phase A was completed. Results indicated that athletes had lower psychological impact of the pandemic compared to non-athletes. Reflexive thematic analysis indicated that over the 7-month longitudinal period, athletes and non-athletes had different experiences across the themes of ‘Appraisal and Coping’, ‘Cognitions’, and ‘Impact of the Pandemic’. Findings show A) a clear longitudinal impact of COVID-19 over a 7-month period; B) there is a clear contrast between sport and non-sport populations, with participants indicating sport and physical activity to be a protective factor limiting negative psychological impact. Findings are discussed with recommendations for physical activity and sport for reducing psychological impact among both athletes and non-athletes.

Keywords: mental health, sport, COVID, longitudinal, India, mixed method, non-western

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Introduction

3 The ongoing COVID-19 pandemic is a global emergency with a multidimensional impact.
4 Several lockdowns, quarantines and curfews have been implemented to manage the pandemic since
5 March 2020 (Castellano-Tejedor et al., 2022) with countries undergoing different stages of lockdowns
6 with different waves of COVID (Zawbaa et al., 2022). The pandemic caused disruptions to sport at global
7 and local levels (Parnell et al., 2020). Headline sport events such as the Olympics and the EUROS were
8 postponed and grassroots/community level sport was suspended (Begović, 2020, McCloskey et al., 2020).
9 The pandemic has impacted individuals globally, with specific implications for athletes, coaches,
10 managers, sport organizations, federations, sport governance officers and sponsors (Byers et al., 2021).
11 On a societal level, industry-wide disruptions caused economic insecurities, financial losses, and
12 unemployment (Begović, 2020).

13 At the psychological level, COVID-19 affected the cognition, emotion, and behaviour of
14 individuals (Li et al., 2021) with individuals experiencing guilt, shame, or stigma (Cavalera, 2020), and
15 feelings of helplessness and fear (Polizzi et al., 2020). Research has indicated that the population is
16 vulnerable to stress, anxiety, and depression, aggravated by suspension of physical activity, recreational
17 and leisure sports (Begović, 2020). Low daily activity and prolonged home confinement has also affected
18 sleep (Altena et al., 2020). Literature has also highlighted a high prevalence of post-traumatic stress
19 symptoms and chronic psychological symptoms (Liu et al., 2020, Sun et al., 2021). Individuals have also
20 engaged in increased ruminations about contracting COVID which has reconditioned behaviour and
21 social interactions (Ho et al., 2020). This psychological impact is framed well by the Protection
22 Motivation Theory (Rogers, 1975) which postulated that perception of risk is determined by the severity
23 and vulnerability to a situation which determines the protective measures an individual undertakes
24 (Khosravi, 2020). A disaster event like COVID-19 sets off negative reactions affecting cognitive
25 assessment (Norris et al., 2002). Therefore, there is a clear *impact* of the pandemic on the thoughts,
26 emotions, and behaviours of individuals.

27 As a population subgroup, athletes experienced uncertainty regarding their health along with
28 anxiety for their physical fitness, occupational security, and performance (Samuel et al., 2020). Athletes
29 have undergone physical deconditioning. They have had most competitions cancelled/postponed
30 (Stambulova et al., 2020), in addition to nutrition deteriorations, disrupted training and sleep patterns
31 (Pillay et al., 2020) which has been caused due to tangible losses to athletic identity and support system

1 (Gupta & McCarthy, 2021). Literature suggests that athletes have experienced a situation like a forced
2 retirement (Jewett et al., 2019; Park et al., 2013). Barriers to quality training and lack of interaction with
3 coaches and teammates have aggravated the psychological impact (Andreato et al., 2020).

4 The psychological impact of COVID lockdowns has impacted individuals in sport and non-sport
5 contexts (Serafini et al., 2020; Gupta & McCarthy, 2021). However, existing literature supports the
6 hypothesis that athletes and non-athletes will have fundamental differences in their levels and experience
7 of negative psychological impact. Recent findings by Şenışık et al. (2020) reveal that physical activity
8 contributes to athlete mental health compared to non-athletes even after a break from sport. This is
9 supported by López-Gutiérrez et al. (2021) who studied psychological distress symptoms of anxiety and
10 depression experienced by different groups during COVID-19. They found that while 50% of non-athletes
11 experienced extreme distress, only 11% of professional athletes and 26% of amateur athletes experienced
12 the same. In a similar vein, only 8% of non-athletes did not experience any distress while 20% of amateur
13 athletes and 28% of professional athletes were free from any distress. Alamdarloo et al. (2019) have also
14 found that female athletes' scores on anxiety and depression are lower compared to non-athlete females.
15 In a comparative study, Bostani and Saiiri (2011) highlight that athlete score higher on emotional
16 intelligence components of happiness, stress tolerance and self-assertiveness. The differences also extend
17 to the prevalence of eating disorders which is higher among athletes compared to non-athletes (Joy et al.,
18 2016). Evidence also indicates that athletes are more vulnerable to mental health risk factors due to
19 previously underdiagnosed mental health risks due to the mental toughness culture promoted in sport
20 (Schinke et al., 2018).

21 Due to the stressors brought about by COVID-19, pre-existing mental ill-health symptoms could
22 have been triggered (Edwards & Thornton, 2020; Goyal et al., 2020), with an overall detrimental effect on
23 the mental health and well-being of athletes and non-athletes (Reardon et al., 2020; Mann et al., 2020).
24 Evidence indicates a tangible psychological impact on individuals due to the long-term temporal nature of
25 the pandemic (Manchia et al., 2022), with some studies indicating sport and physical activity acting as a
26 protective factor against risk factors to mental health (Şenışık et al., 2020; Wright et al., 2021; Canady,
27 2022).

28 However, little to no research has been conducted to explore impact across time using
29 longitudinal research designs comparing sport and non-sport populations. Furthermore, as recommended
30 by Gupta and Divekar (2022) there is a need for more representative studies with diverse samples in sport
31 psychology literature. The importance of considering the cultural context while analysing the impact of
32 the COVID-19 pandemic is highlighted by Lee et al. (2020). Cultural factors cause variations in the

1 significance and adoption of protective behaviours, information seeking behaviour, along with the nature
2 of society (collectivistic/individualistic) which influence the level of risks related to the pandemic. This
3 constitutes a clear research gap, despite studies calling for more longitudinal evidence providing details
4 on the psychological impact of COVID across time, especially in the context of non-western samples
5 (Gupta & McCarthy, 2021; Gopal et al., 2020; Hamza et al., 2021; Prati & Mancini, 2021). The primary
6 objective of our study is to employ a mixed-method, longitudinal design to isolate and understand the
7 impact of COVID-19 pandemic among an Indian athlete and non-athlete group. To isolate the event-
8 specific impact of the pandemic, we administered the Impact of Event Scale-Revised (Weiss & Marmar,
9 1997), to explore severity of distress, avoidant cognitions, intrusions, and autonomic arousal (Salsman et
10 al., 2015). We followed this with a longitudinal qualitative phase to deeply understand the lived
11 experience of the impacts of the pandemic over time.

12 **Research Question**

13 To explore the longitudinal impact of the COVID-19 pandemic on athlete and non-athlete groups
14 by isolating and exploring the changes in cognition, behaviour, and emotions and the coping strategies
15 and mechanisms used.

16 **Method**

17 **Research Design**

18 This longitudinal research was conducted in two parts using a sequential explanatory design.
19 Phase A was a quantitative study with a sample of athletes and non-athletes measuring the impact of the
20 COVID lockdown event. Phase B was a qualitative follow-up study with the same participants 7 months
21 after Phase A, to explore the changes in lived experience.

22 **Research Paradigm and Methodological Congruence**

23 In line with the recommendations of Braun and Clarke (2020), a focus was placed on achieving a
24 ‘good fit’ between theoretical and conceptual underpinning and the level of analysis employed. We
25 ensured consistency throughout ideation, research questions, philosophical orientation, and theoretical
26 perspectives to achieve this (Mayan, 2009). This study adopts a stance of ontological relativism
27 (Cresswell, 2013) and is based on an interpretivist-realist epistemology concerned with understanding the
28 wide-ranging impacts of the COVID pandemic among athletes and non-athletes through a longitudinal
29 design. Statistical analysis was chosen to gauge responses on the psychometric and thematic analysis was
30 chosen to dive deeper to understand patterns within the lived experiences.

1 **Recruitment and Participants**

2 Ethical clearance for the study was obtained from university institutional ethics board. Purposive
3 sampling was used to recruit participants. For the athlete group, Indian table tennis athletes, residing
4 within India during the COVID pandemic were included. For the non-athlete group, individuals who did
5 not play competitive sport, nor engaged in regular sport-based training were included. Recruitment was
6 conducted from an applied sport environment from second author's practice. The same group of
7 participants were invited for the qualitative study. For the interview, participants who were
8 uncomfortable/not fluent in English were excluded to ensure linguistic standardisation in the interview
9 process.

10 Participants were briefed on the parameters of the study and informed consent was obtained.
11 Phase A of the study had 32 participants with 16 participants in the athlete group ($M_{age} = 17$, $SD = 3.56$;
12 male/female = 9/7) and 16 participants in the non-athlete group ($M_{age} = 17.13$, $SD = 3.86$; male/female =
13 7/9). Phase B qualitative study had 7 participants (athlete group= 3; non-athlete group= 4) from the initial
14 sample who consented for interview ($M_{age} = 20.14$, $SD = 1.95$; male/female = 2/5).

15 **Measures**

16 The Impact of Event Scale-Revised (IES-R) (Weiss & Marmar, 1997) was the psychometric used
17 to measure the psychological impact of the pandemic. The IES-R measures subjective responses to a
18 traumatic event experienced by an individual i.e., COVID-19 pandemic here (Weiss, 2007). IES-R has 22
19 items and three subscales - intrusion, avoidance, and hyperarousal. Responses were provided on a Likert
20 scale, with 0- not at all and 4- extremely. The scale yields a total subjective stress IES-R score which is
21 categorised as normal/minimal psychological impact (score 0-23), mild psychological impact (score 24-
22 32), moderate psychological impact (score 33-36) or severe psychological impact (score >37) (Wang et
23 al., 2020).

24 Semi-structured interviews were employed for Phase B qualitative data collection. Interview
25 schedule included open-ended questions with probes offering participants the space to explore their
26 experience of the psychological impacts of the pandemic over the 7-month period. The interviewer took
27 the role of an 'active listener' (Smith & Sparkes, 2005) and encouraged the participants to share their
28 stories by using techniques from experiential interview schemes such as reflecting upon lived situation
29 (Janz, 1982)

30 **Procedure**

31 **Phase A**

1 Participants were informed about the background and purpose of the study on first contact during
2 applied sport and exercise psychology support following which informed consent was secured. Parental
3 consent was also obtained for participants under 18 years of age. IES-R was administered to all the
4 participants using a printed/digital version. Participants were briefed on the instructions on the scale and
5 were encouraged ask for any clarification. Participants were informed of their right to withdraw,
6 protection of identifiable information and data confidentiality. Upon completion of the IES-R, participants
7 were debriefed, and consent to contact them for Phase B was obtained.

8 **Phase B**

9 Participants were followed up with consent after 7 months and were invited for a 30-40-minute
10 online interview over Zoom. Participants were re-briefed on research objectives, and informed consent
11 was obtained. Permission to audio record the interviews was obtained. The process of interview was
12 outlined, and participants were encouraged to inform the interviewer if they experienced any discomfort
13 while talking about the ongoing COVID-19 pandemic. Data confidentiality, storage and right to withdraw
14 was briefed to the participants. Participants were also debriefed at the end of the interviews and the
15 interviewer answered any follow-up questions. Authors had sole access to the data which was stored on a
16 private drive. Verbatim transcription was conducted, and transcripts were anonymised and coded to redact
17 any identifying information to maintain data integrity and protect participant identity (Saunders et al.,
18 2015). Pseudonyms were assigned to participants and are presented in the results section.

19 **Data Analysis**

20 **Phase A**

21 Data was organised using Excel and analysis was conducted using IBM SPSS 22. The scores for
22 each IES-R subscale were determined by calculating the mean of items corresponding to the particular
23 subscale. IES-R total score was calculated as sum of subscales according to psychometric scoring
24 instructions to calculate psychological impact into minimal, mild, and moderate/severe (see Weis &
25 Marmar, 1997). Due to sample size limitations, inferential statistics was not conducted. Percentage of
26 responses were calculated across total sample and divided into the three categories across athlete and non-
27 athlete subgroup to present an overview and comparison.

28 **Phase B**

29 Qualitative data collected using interviews was analysed using reflexive thematic analysis (Braun
30 and Clarke, 2019). The analysis was informed by the six phases of analysis outlined by Braun and Clarke
31 (2006). The first author collected the data, conducted verbatim transcription, and re-read transcript for

1 data familiarity. Manual coding was conducted. Open coding of relevant data items was done to ensure
2 transcripts were divided into smaller, semantically meaningful groups via a data-driven process. The next
3 step of coding was theory-informed coding. Axial coding was conducted to collate relating data together
4 under codes/categories. For example, codes under the subtheme ‘Appraisal of Stress’ were included if
5 they were “largely evaluative, focused on meaning and significance” of the event (Lazarus and Folkman,
6 1984, p. 31).

7 Finally, thematic coding was conducted to examine the relationship between codes and cluster
8 related codes together into a thematic map. Key patterns were visualized as a hierarchy with overarching
9 themes and sub-themes, with a few discarded and miscellaneous codes. The themes were then reviewed,
10 merged, broken down, discarded, or newly developed keeping in mind Patton’s (1990) dual criteria of
11 internal homogeneity and external heterogeneity. Themes were refined twice to ensure a clear, central
12 organising concept and a homogenous ‘fit’ with the coded data while accurately representing the
13 meanings reflected in the overall data set. The second author also engaged in the two levels of review to
14 ensure that the developed themes were nuanced and relevant and to the research question. Critical friends
15 were also used to provide feedback on the inference and coding process. Lastly, the themes were named
16 and defined to build a coherent narrative of the data.

17 **Results**

18 **Phase A**

19 Psychometric scoring of the three IES-R subscales (Avoidance, Intrusion and Hyperarousal
20 revealed the psychological impact of the pandemic (Weiss & Marmar, 1997). The results indicate that the
21 psychological impact for the athlete group ($M= 21.44$, $SD=11.06$) was lower than that for the non-athlete
22 group ($M=25.77$, $SD=16.95$). Among the participants ($n=32$), 46.88% reported minimal psychological
23 impact (score <23), 28.12% reported a mild psychological impact (score 24-32) and 25% reported
24 moderate or severe psychological impact (score >33). The psychological impact reported by the athletes
25 and non-athletes is represented in Figure 1.

26 **INSERT FIGURE 1 HERE**

27 **Phase B**

28 The reflexive thematic analysis highlighted 3 global themes, 9 organising themes and 65 basic
29 themes (Braun and Clarke, 2006; Attride-Stirling, 2001) (see Table 1; Figure 2).

30 **INSERT TABLE 1 HERE**

1 INSERT FIGURE 2 HERE

2 **Theme 1: Appraisal and Coping**

3 *Appraisal of Stress*

4 Results indicated stark differences across participants in how they engaged in appraisal of two
5 waves of the pandemic over 7 months. This was highlighted by “Ethan”.

6 “So 2nd lockdown at least was a lot heavier mentally, physically, just very fatiguing ... the first
7 lockdown still felt a little refreshing like being at home ... but second lockdown I just completely blanked
8 out on like anything positive.”

9 However, for some participants, the primary appraisal of the pandemic changed when the gravity
10 of the situation set in. “Sakshi” illustrates this shift, stating:

11 “As the cases kept rising, I think everyone came to terms with the fact including me that this is
12 going to stay and we don’t really have a solution for it and that is when uh anxiety, stress everything
13 started mounting.” (Participant “Sakshi”)

14 “Sanvi” experienced an increase in anxiety due to her appraisal of this event as something
15 stressful that she could not imagine coping with i.e., an example of a secondary threat appraisal.

16 “I was very anxious because the second wave was very ... it was very prominent in terms of
17 number of deaths, number of people getting COVID and like really rise number of people losing their
18 loved ones so I was very anxious.”

19 Among the athletes, both “Aditya” and “Sneha” initially appraised the pandemic as beneficial
20 which protected them from a severe negative impact and allowed them to use this time for personal,
21 interpersonal, and professional development.

22 “This had never happened in our life we always keep on training and there’s a heavy routine of
23 practice and matches and we hardly have time to breathe so like at first in the first 10 days of the
24 lockdown it was kind of a welcome change.” (Participant “Sneha”).

25 *Coping*

26 Among the non-athletes, some participants deployed various problem-focused strategies, one of
27 which was described by “Sanvi”.

1 “I would plan, that’s the first thing I would do, I would assess the situation ... and assess what the
2 current situation is and what are the other different ways I can go about it and try to deal with it.”

3 Both groups used various emotion-focused and/or avoidance-focused strategies like using drugs,
4 consuming food, talking about the problem, letting it go, procrastinating, reaching out to friends, using
5 distractions and avoidance. “Disha” shared that she had never felt “this stressed” as she did during the
6 pandemic. Some participants reported an improvement in their mental health when they engaged in
7 structured coping resources, while others experienced no change and came up with new strategies (see
8 Table 1). Among the athlete group, most athletes engaged in emotion-focused coping determined by the
9 controllability of the situation. This process of coping is best highlighted by “Arzoo’s” focus on appraisal
10 and coping,

11 “But if something is not in my hand, I can’t stress about it and stretch it so if it’s not in my hand I
12 try to let it go, it takes time but I try to let it go but if something is in my hand, I try to search for other
13 options ... what can I do about it and then I try to do that thing.” (Participant “Arzoo”)

14 *Support System*

15 Family, partners, and friends were a crucial part of the support system for all the participants as
16 they provided emotional, esteem and tangible support. For athletes, their support system also comprised
17 sport-related individuals like coaches and senior players.

18 “Few of my close friends (from sport) who were always in touch we used to uh discuss together
19 about picking up new skills or doing something or keeping each other on track with our fitness routines
20 and all that so if one does it and he you know makes sure that the other guys do it as well” (Participant
21 “Aditya”)

22 “Ethan” recalled the distress he experienced caused by the loss of his best friend’s support and
23 “That is another huge change in my life because I don’t have that number 1 person to go to for a problem,
24 for an issue. So that’s been a pretty heavy, like a pretty big change”

25 Social media also served as a medium of support. For example, feedback and validation was a
26 source of esteem support for “Arzoo” and a way to be connected with her sport life through the digital
27 space. She stated, “I was really happy, I was posting it everywhere, I’m getting comments and all so I’m
28 feeling good about it.”

1 A key distinguishing factor of social support during the pandemic was the complete shift of social
2 support via virtual, digital medium where most social interactions were taking place due to lockdowns
3 and social distancing laws. Some participants adapted to these novel circumstances by using online video
4 call applications to their advantage. “Sanvi” illustrated this change by saying, “So my friends and I ... we
5 started this group, every week group call and we would play like games and like talk and like see movies
6 or something to like lift each other up”

7 However, at times, participants expressed that virtual media served as a barrier in communication
8 which caused a great deal of annoyance and frustration. “Disha” highlights,

9 “It’s kinda difficult to communicate with people through you know virtually and I couldn’t meet
10 a lot of people ... I think overall I just sort of shut down in the middle and I was just keeping things to
11 myself”

12 **Theme 2: Cognitions**

13 *Ruminations*

14 For most non-athletes, the focus of their thoughts and feelings described the active self-reflection
15 component of rumination.

16 “We all know that life moves on, but this pandemic has taught me that it DOES move on like
17 whatever happens the world might come to a stop, you might lose people, you might lose billions of
18 people but life continues regardless of whatever happens and you have to pick yourself up.” (Participant
19 “Sakshi”)

20 Participants also experienced intrusive thoughts centred around infection and vaccine-related
21 ruminations. Furthermore, history of mental health concerns also had an impact on ruminations.

22 “I have anxiety and like generalised anxiety and anticipatory anxiety so that really got enhanced
23 in the entire in the entire thing of what is going to happen, what is the future so those thoughts of
24 overthinking.” (Participant “Sanvi”)

25 The athlete participants’ ruminations were mainly process-focused, or avoidance focused based
26 on controllability. This was expressed as beneficial since it allowed higher levels of mastery during daily
27 life activities.

1 “For some time during the day even if you feel you know a bit sad or whatever I don’t- I didn’t
2 dwell on that is what I’d say. I was trying to you know do something or the other to keep myself occupied
3 or do something which would either help me in my academics or with my sport.” (Participant “Aditya”)

4 *Attitudes towards Occupation and Mental Health*

5 The majority of the participants were full-time students (in addition to sport and/or part time
6 occupation) and shared their experience with online university and education. Nearly all participants
7 highlighted why students were asked to focus on college and assignments when “there are like much
8 greater things of like COVID happening” (Participant “Sanvi”).

9 Among the athlete participants, “Aditya” highlighted a different pattern, because he used to miss
10 university due to travelling to tournaments across the year. He noted, “I used to make sure that I attended
11 those I used to make sure I attended all the casual video calls and group chats after that, lecture part me
12 I’m not interested.” This indicates how education and occupation also contributes directly to social
13 support.

14 When it came to attitudes towards mental health, nearly half of the participants did not access
15 therapy either due to a perceived lack of need or due to financial restrictions. The other half expressed a
16 different opinion which “Sanvi” described as “I like it {therapy} it’s like a calming way of I get to deal
17 and rational out my emotions in a way of like why am I thinking the way I am thinking.”

18 All athletes shared that they did not feel the need to seek help from a mental health professional.
19 For some, it was because they had a positive experience with the pandemic or because they had a support
20 system that met their needs. For others, there was a perception that the negative impact that they were
21 facing was “manageable.” However, when it came to seeking help from a sport psychologist (SP),
22 participants had different experiences. Since there were no tournaments, “Aditya” did not feel the need to
23 speak to an SP. However, “Arzoo” said,

24 “I was a little scared... that I’m not a- I’m working so hard, I’m playing well but when I’m
25 playing matches there was something- something is going wrong, so I just went once to Dr P and he just
26 explained me some things.” (Participant “Arzoo”)

27 **Theme 3: Impact of the Pandemic**

28 *Lifestyle Changes*

1 The first aspect of lifestyle changes included behavioural change. All non-athlete participants
2 reported a complete change in sleep schedules due to a lack of externally set routines, which was a
3 behavioural change. “Sakshi” shared how her internship was “pretty flexible in its timings” which
4 allowed her to sleep in in the morning and work till late. COVID-19-related practices along with routine-
5 related changes were an aspect of behavioural change.

6 “A simple thing like washing your hands once you get back home so that I would I don’t know if
7 I was doing it pre-pandemic but right now it’s such a rigid thing ... so that behaviour I think has really set
8 into me.” (Participant “Sanvi”)

9 A major point of difference among athletes across the longitudinal time period was the shift from
10 an active sport lifestyle to a home-contained, sedentary lifestyle where “staying occupied” was difficult.
11 All athletes highlighted the impact of lethargy that set in after loss of their normally sporting and active
12 lifestyle which also had self-esteem, and self-regulatory effects. “Sneha” shared her experience of how
13 “Lethargy had kicked in and uh even though I was keeping myself busy I was not practising, so there was
14 this constant thing I was feeling that what I’m doing is not enough right now.”

15 As a result of this change, all athletes shared the sentiment of trying to stay occupied to avoid
16 self-critical thoughts and maintain a behavioural pattern. All athletes engaged in some form of explorative
17 behaviour over the seven-month time period such as in in leisure, hobbies (e.g., painting), learning new
18 skills (e.g., knitting) or household chores. “Arzoo” specifically stated how painting and other creative
19 pursuits allowed her to explore her identity beyond that of her athletic one. “Arzoo” highlighted how she
20 was “feeling happy that I’m doing something good...if it turned out well, I’m more happy that yeah it’s
21 looking good...I can do this also, except than playing I can do this...so I was feeling very good about
22 that.”

23 Such activities were examples of autonomy, personal development and task-focused coping and
24 reduced the psychological impact “Aditya” shared, “I was trying to you know do something or the other
25 to keep myself occupied or do something which would either help me in my academics or with my sport
26 or with my general fitness level.”

27 Among non-athletes, college activities, internships and other daily life processes became
28 behavioural engagements. Interestingly, over the seven-month period, participants picked up and engaged
29 in physical activity for fitness and health purposes. This was different to athletes who engaged in it for
30 professional purposes. For some participants, physical activity was also a way of coping with the lifestyle
31 impact of the pandemic. “Disha” recounts how,

1 “You know there was no physical exercise like I have always throughout my life since I was like
2 5 years old, I have been doing something physically ... so that was making me really restless and fidgety
3 at the start because I was getting no physical exercise in and I was putting on weight that was making me
4 feel very anxious about myself as well.”

5 *Emotional Experience*

6 Anxiety, worry, uncertainty and fear were common emotions among the participants during the
7 pandemic. This was due to multiple factors including the rising number of deaths, the prolongation of the
8 pandemic, fear of losing family, uncertainty about college and anxiety about missing practice. Some
9 participants also experienced an increase in the intensity of these emotions which is best captured in the
10 narrative of “Sakshi”.

11 “Once the pandemic started obviously these feelings of anxiety, tension, worry all arose and as
12 the cases kept increasing these feelings kept increasing so if I like didn’t have these feelings at all, if
13 that’s the baseline then all these feelings came to like a mid-level high and they’ve stayed that way.”

14 Being able to catch a break and be safe from the virus made many participants happy and grateful
15 but it was accompanied with guilt. “Sakshi” shared that there was “A lot of emotional sort of imbalance
16 because you’re sort of happy that you’re safe but that the same time you know it’s so bad out there that
17 you can’t really be happy.” Boredom, loneliness, fatigue, and helplessness were also among the emotions
18 experienced by different participants. However, frustration, irritation and anger were potent emotions
19 when it came to contracting the virus and being limited by the restrictions and lockdowns.

20 Mental health concerns also had a role to play in exacerbating the emotional impact of the
21 pandemic. The intensity and expression of “Ethan’s” emotions were affected and sometimes led to
22 breakdowns.

23 “On some days I feel I’m at an 8, 8 out of 10 pain scale and the 8 is a good day, the 11 is a bad
24 day so that’s how it is like. So...my emotions are like either like they are polar opposites.”

25 Athletes experienced similar emotions to those of their non-athlete counterpart, but the intensity
26 and frequency was considerably lower. They also did not speak about feeling sad, guilty, or angry.
27 However, one emotion that was expressed solely by the athletes was that of relief, especially for “Aditya”
28 who was dealing with “injury issues.”

29 *Impact on Sport*

1 The impact on sport was categorised into two basic themes. The first one was the impact on
2 training and competition. Athlete participants' experiences with the gap in training, the effect on
3 performance, and the emotions they felt when training resumed were quite unique. "Aditya" shared how
4 he "didn't lose anything in terms of the sporting aspect." When lockdown restrictions were partially lifted
5 after the 1st wave had subsided, "Arzoo" shared that her lockdown training made her feel confident about
6 the efforts she had put in, which was further validated by her good performance in the national
7 tournament. However, there was a longer gap to training and return to sport after the second COVID-19
8 wave. This resulted in longer disengagement from sport which cause numerous challenges such as
9 "getting tired so early" (poor sleep cycle) and "getting back in shape" (body image and fitness concerns),
10 as well as a fear of losing to a junior and/or less experienced/lower ranked player.

11 Similar to other athletes, "Sneha" shared feeling "REALLY great" (emphasis during interview)
12 when training resumed and for her, the feelings of loneliness went away. The second basic theme was
13 related to how athletes adapted and continued to work on their sport at home, mental or physical.
14 "Aditya" spent time doing yoga and pranayama to increase his flexibility along with,

15 "I was also doing my well regular fitness stuff as in I mean like I said, it gave time to do a lot of
16 rehab work as well, like suppose injury-specific work and all, so to strengthen that particular area."

17 "Arzoo" and her husband, also a professional table tennis player, used to work out and practice on
18 the table they had at their second home. She used various techniques as a supplement for on-table training
19 like, "I used to visualize that I'm playing before sleeping, after waking up I used to see some good TT
20 matches, some old matches of mine, some old matches of some players, some good players which I
21 follow."

22 Like the others, "Sneha" also continued working on her fitness during the pandemic. She also
23 engaged in activities which would indirectly help her when she resumed training. She described one such
24 activities, "I even learned knitting, so it helped kind of to like uh it helps for focus and mindfulness so uh
25 whenever uh like not much time was given to negative thoughts."

26 ***Inter and Intrapersonal Changes***

27 The inter and intrapersonal changes were perceived as positive and negative by the participants.
28 Individual differences were found in the perception of these changes as the positive changes were not
29 very extensive for the non-athlete participants. For "Disha", it was an improvement in health while for

1 “Ethan” it was gaining self-awareness as he expressed “I’ve started recognising myself for a lot more of
2 personal reasons like I know a lot more about who and what I am now than I did before.”

3 The experiences of athletes were specifically focused on the themes of ‘Relationships and family’
4 and having ‘Time for themselves’. “Arzoo” talked about how she was able to “spend quality time” with
5 her family while “Aditya” shared how the pandemic gave him “time to take care of” himself and:

6 “It allowed me to work on a few things on myself as well which I wouldn’t had the time to if this
7 hadn’t happened. So, for me, I would say it had a positive impact and although you do miss out on some
8 things but I gained some things as well.”

9 Among non-athletes, primary focus was placed on negative changes in their education and
10 university. “Disha” specifically evoked how “I felt I mean I have been in college since like the 11th
11 grade, so I felt robbed of the two years.” However, athletes did not specifically consider the loss of
12 education or university life as a major interpersonal change important to them. This could be indicative of
13 individuals perceiving themselves as ‘athlete-first’ and ‘student-second’.

14

Discussion

15 The results of the study indicate that athletes had minimal psychological impact from the
16 COVID-19 pandemic lockdowns over a longitudinal period as compared to non-athlete populations. The
17 two waves of the pandemic that participants experienced throughout the two data collection points of this
18 longitudinal study align with “Coronavirus Stage A and B” of Samuel et al. (2020)’s conceptualisation of
19 the COVID-19 pandemic as a career change event. Specifically, the athletes noted that in the initial Stage
20 A, there was an environmental change which caused physiological and psychosocial changes in motor
21 skills, performance and achievement, motivation, and relationships. Across time, this also impacted them
22 through issues such as (but not limited to) changes to their sleep schedules and exercise regimen, which
23 led to lowered mastery, competence, and confidence (Gupta & McCarthy, 2021). This also led to feelings
24 of inadequate preparation and higher pre-competitive anxiety (see Results section), which is indicative of
25 athletes returning to competitive sport after a prolonged period out of it (Aravind et al., 2022; Pineda et
26 al., 2015).

27 The psychological impact measured by the IES-R revealed that half of the participants reported a
28 minimal psychological impact. This is in contrast to Wang et al. (2020) who found that majority of
29 participants reported a moderate or severe psychological impact. One contributing factor to this difference
30 could be the time frame and longitudinal nature of the study. Wang et al. (2020)’s study was conducted in

1 the beginning period of quarantine whereas the current study was conducted from February to September
2 2021. Research indicates that individuals have gotten habituated and had cognitive adjustments to the
3 reality of living while the pandemic was going on (Daly & Robinson, 2021; Fancourt et al., 2021), which
4 may explain the divergence of results. Athletes reported experiencing many challenges such as selection
5 and qualification uncertainty, restricted access to training avenues, need for an opponent, on-location
6 practice and need for equipment (Andreato et al., 2020, & Schinke et al., 2020). However, results
7 indicated that they actively engaged in self-determined intrinsic motivational processes guided by
8 autonomy, in search for competence (skill maintenance) and relatedness (social support) (Bartholomew et
9 al., 2011) across the longitudinal period of time.

10 The results of this study did not support the findings of Xiong et al. (2020) stating that prolonged
11 quarantine periods are associated with a higher prevalence of psychological distress and posttraumatic
12 stress disorder symptoms. Only 20% of the participants in our study scored severe in the IES-R and did
13 not link the psychological impact to quarantine factors, but other factors such as pre-existing mental
14 health conditions or distinct lifestyle changes during the interviews. Interestingly, non-athletes scored
15 higher than athletes on the IES-R, indicating a higher psychological impact. From the qualitative study, it
16 was clear that athletes were making greater attempts at being physically active by incorporating physical
17 and skills training into their lifestyle, as compared to non-athletes who were generally sedentary during
18 the lockdown periods. This engagement in physical activity has been associated with reduced event stress
19 levels (Şenışık et al., 2020), along with reduction of anxiety and depression symptoms (Mammen and
20 Faulkner, 2013; Schuch et al., 2019) and could be one reason for the differences between athlete and non-
21 athlete group.

22 Our findings also support the assertions that COVID-19 is a non-normative adversity for sporting
23 populations (Gupta & McCarthy, 2020). Aligning our findings to Nicholls et al., (2016)'s sport-specific
24 classification of coping, it is seen that athletes adopted internal regulation coping strategies like emotion-
25 focused coping and acceptance compared to non-athlete group. Examples of common strategies across
26 both groups were 'remain busy', 'sharing feelings with others', 'talk to others', and 'struggling to deal'
27 (see Kar et al., 2020). A key finding of our longitudinal study is the process and utilisation of social
28 support. There was a clear shift to the dimension or means of social support. All participants accessed
29 social support, interactions, and connectedness through the digital world via online medium of text
30 messaging, and videoconferencing which contributed to positive coping (Garfin, 2020; Marcin et al.,
31 2016; Naslund et al., 2016; Seabrook et al., 2016; Tsai et al., 2010). Participants also used online medium
32 for value driven social activities such as educational activities, training, celebratory events, pursuing
33 hobbies which increased psychological well-being (Dekel et al., 2016; Polizzi et al., 2020)

1 Interestingly, results indicate both athlete and non-athlete groups were in direct contact with their
2 occupational support systems. All athletes were in direct contact with coaches or other athletes which
3 helped dealing with lockdown stress (see di Fronso et al., 2020). This form of tangible (sending
4 equipment to train at home) and informational support (video calling for skills technique corrections and
5 support) from coaches was found to promote resilience and buffer the stress-burnout relationship (Gupta
6 & Sudhesh, 2019; Lu et al., 2016; Pété et al., 2022). Non-athletes relied on family and peer support to
7 promote resilience behaviours (Mummery et al., 2004). Results also indicate that although athletes
8 experienced a loss of sport, they retained support through sport and other means throughout the
9 longitudinal term of the study compared to non-athletes. This supports the assertions of research which
10 noted an active process of resilient adaptation using psychological skills learned through sport to adapt to
11 changing routines, isolation (common during sport travel), emotional challenges and applying it to
12 COVID-19 related difficulties (Andreato et al., 2020; Gupta & McCarthy, 2021; Stambulova et al., 2020).
13 Non-athletes did not report this transfer of psychological skills to deal with the COVID-19 challenges.
14 Therefore, the difference in emotional intensity between athletes and non-athletes (see Knowles et al.,
15 2021) could be explained by the resilience protective factors which sport has built in athletes but was
16 absent for non-athletes (Serafini et al., 2020). To this end, both populations could benefit from time-
17 limited, realistic goal setting, which helps in planning during uncertainty (Gupta & McCarthy, 2022).

18 **Implications and Future Directions**

19 This study finds its significance as being one of the few studies to investigate the psychological
20 impact of COVID-19 pandemic on a non-western population sample. The findings highlight the
21 similarities and some major differences that arise from the context, including population differences and
22 differences in coping styles. This adds on to the foundation for future research to build research designs
23 with diverse samples aligned with cultural sport psychology principles and avoid “context evacuated
24 methodology” (Eubank et al., 2017, p. 14).

25 The study supports existing studies in extending the evidence on the psychological impact of
26 COVID-19 on athletes over a longitudinal 7-month period. Tracing the impact, and qualitatively
27 exploring their experiences provides literature with the transitions in experience of athletes and non-
28 athletes through the course of the pandemic. By doing so, the study validates Samuel et al. (2020)
29 conceptualisation of COVID-19 as a “change event” (p.4). The results of our study also provide
30 longitudinal evidence which can be used as a foundation for future research which seeks to understand
31 other change-events such as injuries, deselection, transitional moments in careers and others.
32 Additionally, the longitudinal change experience provided is also relevant to applied practice, which is

1 not a single, one-time event, but rather interventions over a period of time (Andersen, 2000). Despite
2 these strengths, this study has two notable limitations. Firstly, the sample is very limited, especially for
3 the quantitative phase of the study. The small sample limits the external validity of the study in terms of
4 the comparisons made as well as the generalisability to other sports. However, this limitation was
5 partially compensated by the in-depth qualitative analysis of the participants' lived experiences. Secondly,
6 the group comparison was manipulated to highlight the differences and identify the role of physical
7 activity mitigating the psychological impact of an event.

8 Our results also outline the stark differences in the experience and psychological impact across
9 athlete and non-athlete groups over the longitudinal period, highlighting a few of the psychological
10 protective factors that sport and physical activity provide (see Landers & Arent, 2007; Rodriguez-Ayllon
11 et al., 2019). This also provides support to the results of Uroh and Adewunmi (2021) which stated that
12 strong athletic identity reduces predisposition to psychological distress to a degree in a Nigerian sample.
13 Future research needs focus on understanding the mechanisms that differentiate athletes and non-athletes
14 in order to contribute to evidence-informed interventions specific for sport populations in applied sport
15 and exercise psychology (Gupta, in-press; Gupta & Divekar, 2022; Tod et al., 2017; Winter & Collins,
16 2015).

17 **Conclusion**

18 This paper provides a mixed method, longitudinal evidence over a 7-month period on the
19 psychological impact of COVID-19 pandemic across athlete and non-athlete groups in a non-western
20 sample. By providing psychometric overview and a deep dive into the experiences, the evidence from this
21 study extends Eubank et al. (2017) proposition that individuals must not be studied in isolation of the
22 cultural and social context they operate within. Our findings highlight differences in the psychological
23 impact across athlete and non-athlete groups. The findings of this pilot study form a fertile ground for
24 future longitudinal investigations and research into differences between athletes and non-athletes to
25 inform applied sport and exercise psychology interventions.

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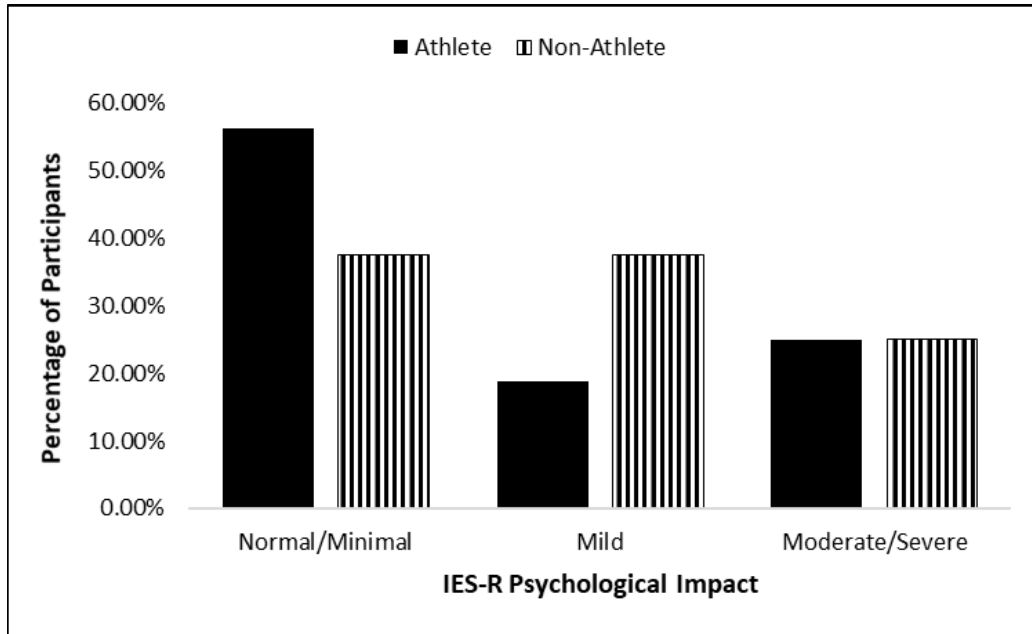
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1 **Appendix**

2 **Figure 1**

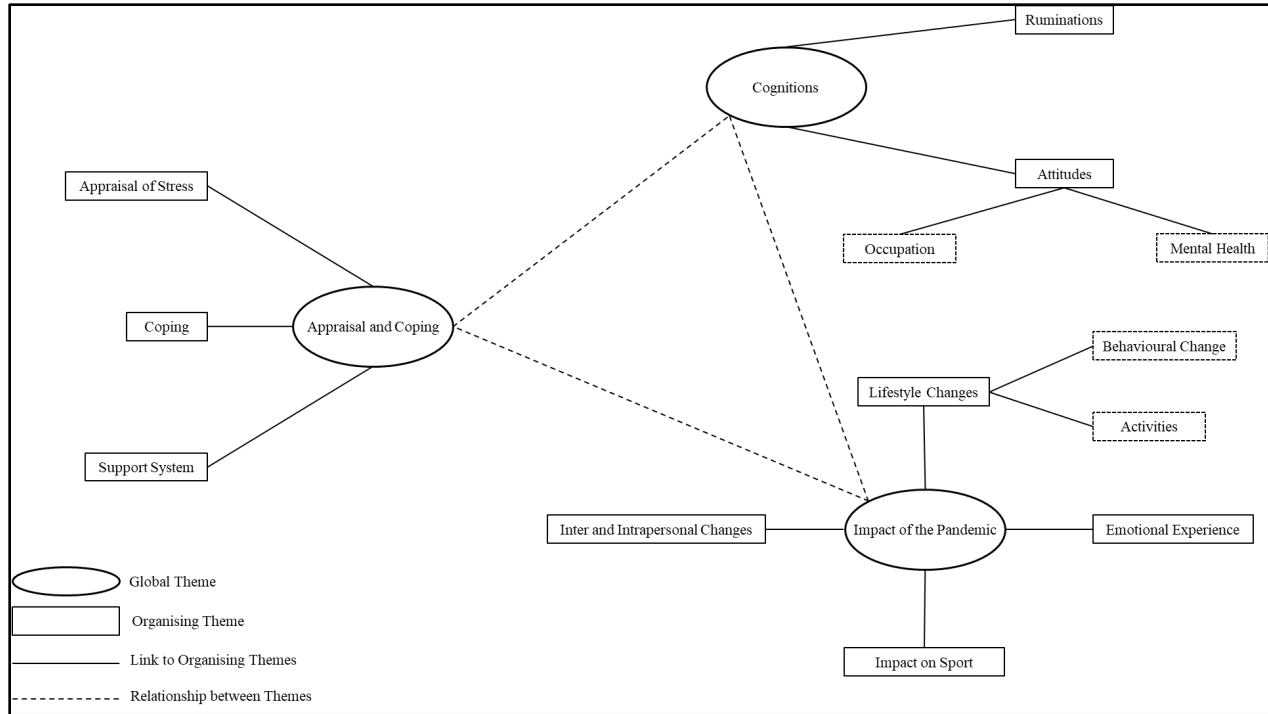
3 *The IES-R psychological impact on athletes and non-athletes*



4

5 **Figure 2**

6 *Thematic map resulting of the longitudinal experience of psychological impact of the pandemic*



1

2 **Table 1**

3 *Emergent global, organising and basic themes*

Global Themes	Organising Themes	Basic Themes
Appraisal and Coping	Appraisal of Stress	Primary appraisal Secondary appraisal
	Coping	Getting another perspective Seeking professional help Seeking advice Use of drugs Eating Talking about the problem Letting it go Procrastination Reaching out to friends Distractions Avoidance Causal attribution - controllability
	Support System	Familial support Support from friends Support from partner Support from neighbours Occupational support - coach, peers, seniors

		Social media Loss of support
Cognitions	Ruminations	Passive brooding Active self-reflection Infection and vaccine-related ruminations
	Attitudes towards Occupation	Online college Questioning priorities Interested in the interactions than learning
	Attitudes towards Mental Health	Beneficial Curiosity regarding MH “No need” Need for/Lack of sport psychology help
Impact of the Pandemic	Lifestyle Changes - Behavioural Change	Changes in sleep schedule Change in eating habits Routine related changes COVID- 19 related practices Active-sedentary change Staying occupied
	Lifestyle Changes - Activities	Picking up new skills College activities Internships Physical activity Leisure activities Hobbies Use of recreational drugs
	Emotional Experience	Anxiety Worry Uncertainty Fear Happiness Gratitude Guilt Sadness Boredom Loneliness Fatigue Helplessness Irritation Anger Frustration Relief Empathy

Impact on Sport	Impact on training and competition Working on sport at home
Inter and Intrapersonal Changes	Positive changes Negative consequences
