



Short Communication

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Impact of the COVID-19 Pandemic on Athletes Participating in the 2022 Masters Field Hockey World Cup

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Abstract

Background: The COVID-19 pandemic impacted lifestyle behaviors and health of masters athletes throughout the world. **Aims and Objectives:** The purpose of this study was to examine the impact of the COVID-19 pandemic on diet, physical activity, and health (physical, mental, social) of athletes participating in the 2022 Masters Field Hockey World Cup. **Materials and Methods:** A total of 391 participants (mean age = 56.83±9.83 years) completed the 35-item Health and Well-being of Masters Hockey Athletes Survey. **Results:** Respondents felt that the COVID-19 pandemic had either no impact/improvement respectively, on their diet (72%/18%), physical activity (55%/30%), and physical health (63%/21%), while reporting either no impact or declines in mental health (67%/24%) and social health (62%/31%). A one-way Analysis of Variance (ANOVA) indicate greater negative impacts in mental health among some younger age groups versus older age groups. Open-ended responses to other impacts of COVID-19 support the finding that participants experienced negative impacts of COVID-19 on their mental and social health. Alternatively, participants reported their overall health to be very good to excellent (80%) and stress to occur rarely or sometimes (79%) by the time of the World Cup events. **Conclusion:** The COVID-19 pandemic had a positive impact on the diet, physical activity and physical health of 2022 World Cup Field Hockey athletes whilst having a negative impact on their mental and social health. As such, future support for the mental and social health of masters field hockey athletes is warranted.

Keywords: Masters athlete, Diet, Physical activity, Physical health, Mental health, Social health.

INTRODUCTION

Older adults in general are at greater health risk from COVID-19 due to age-related declines in immune function and potentially other underlying health conditions.¹ Due to their age, masters athletes may also be at a higher risk for severe illness and complications from COVID-19 [2, 3]. In addition to potential health issues, masters athletes who contract COVID-19 may experience significant impacts on their fitness and athletic performance [4,5,6,7].

Masters athletes often devote a significant amount of time and effort both to training for fitness and to their sport.^{3,8} For many masters athletes, the COVID-19 pandemic (illness and/or restrictions, including lockdowns) may have disrupted training for fitness and sport, and competitions were canceled or postponed.⁴ Other studies conducted during the pandemic reported reductions in older adults' physical activity due to the pandemic [9, 10, 11] and for athletes of various ages and levels of classification [12].

With disruptions in training and competition schedules put on hold¹³ due to restrictions and/or from illness due to COVID-19, masters athletes may have also had significant impacts on their diet [14, 15]. Larson, Bader-Larsen, & Magkos (2021) found that while 6 in 10 studies they reviewed showed no changes in dietary habits during the pandemic, there were negative changes in the remainder. Another study focusing on Dutch older adults had similar negative findings [11].

The potentially negative impacts of the COVID-19 pandemic on diet, physical training, and physical health were not the only challenges masters athletes faced. The lack of social interactions and support due to isolation from restrictions and/or cancellation of social, training, sports, and recreational activities, likely

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contributed to negative impacts and vulnerability on mental and social health [16, 17, 18]. Research on athletes of varying ages indicates negative impacts on stress, anxiety, sleep, life satisfaction, mood, well-being, training routines and depression during the COVID-19 pandemic for a variety of populations [4,5,19,20,21,22]

After being postponed due to the COVID-19 pandemic in 2020 and 2021, Masters World Cup competition in field hockey resumed in 2022. Given the potential impacts of the pandemic on various aspects of health, it would be helpful to explore masters athletes' perceptions of such impacts in order to support strategic decisions about their health and well-being in the face of potential future pandemics, or other natural disasters. Thus, the purpose of this study was to explore the impact of the COVID-19 pandemic on the physical, mental and social health of masters field hockey athletes competing in the 2022 World Cup, as well as the impact on diet and physical activity practices. Other perceived impacts of the pandemic were also obtained.

MATERIALS AND METHODS

Participants

Participants were 391 athletes who competed in the 2022 Masters Field Hockey World Cups held in Nottingham, England, Cape Town, South Africa, and Tokyo, Japan. Participants were recruited via the World Masters Hockey website and Facebook page, as well as emails to participating country contacts just prior to, during, and just after the World Cup events. Additional recruitment was conducted directly at the England and South Africa sites through hand out of flyers and word of mouth. The Institutional Review Board at Saint Joseph's College of Maine approved the study. Compliance regulations for research on human subjects were followed. All participants were informed about the purpose of the study and agreed to participate through an online informed consent. Data was collected over a 5-month period prior to, during, and just after the World Cup events.

Measures

The measure used in this study was the Health and Well-being of Masters World Cup Field Hockey

Athletes Survey.⁸ The 35-item survey was administered through SurveyMonkey and included questions related to demographics, health, lifestyle behaviors, field hockey participation, COVID-19 illness status and impact, and well-being. Demographic questions included age, gender, country of citizenship, education, occupation, and household income.

Perceived health was queried with a single item question, "How would you rate your current health", with answer selections ranging from "excellent" to "poor". The Occupational Stress Questionnaire, a single item measure, was used to measure perceived stress. [23] After being provided a definition of stress, participants responded to "How often do you feel this kind of stress these days? Rate on a scale of 1 (not at all) to 5 (very much)." They were also asked to select from a list any strategies they use to manage stress.

Questions related to COVID-19 included illness and vaccine status as well as perceived impact on health. Respondents indicated their perceived impact as "improved", "no change" or "declined" with regard to mental health, physical health, social health, diet, and physical activity. An optional open-ended question on other COVID-19 impacts on health and well-being was also included.

Data Analysis

A mixed methodology approach was used to analyze data in this study. Descriptive and inferential statistics were used to analyze quantitative data. Comments on the open-ended question of other COVID-19

impacts were qualitatively analyzed for recurring themes. Frequencies, percentages, and means (SD) were used to describe demographic and COVID-19 illness, vaccine, and impact questions. One-way analysis of variance (ANOVA) statistics were conducted to determine differences among the variables by age group. Significance was set at $p < .05$. Data were analyzed using IBM SPSS Statistics for Windows, Version 25.

RESULTS

Three hundred and ninety one participants from 29 different countries completed the Health and Wellbeing of Masters Field Hockey Athletes Survey. Participants ranged in age from 34 to 74 (mean age = 56.86, SD = 9.83). The mean age for males was 58.32 (SD = 9.60) and for females was 55.31 (SD = 9.85). Demographic information for participants is presented in Table 1.

Perceived Health and Levels of Stress

Table 2 indicates that in general, participants rated their perceived health as "very good" (27.6%) or "excellent" (51.7%). Only 2.8% rated their perceived health as "fair". For levels of stress, participants indicated that they "rarely" (42.7%) or "sometimes" (36.1%) experienced stress. Only .8% indicated their level of stress as "very much." (Table 3).

COVID-19 Status and Impact

Participants were asked to indicate their COVID-19 vaccination status and illness. The results indicated that 170 (43.5%) had the initial vaccine series, 316 (80.8%) had received the first booster, and 223 (57.0%) had COVID at least once (Table 4). Overall, 3 participants reported not having had a COVID-19 vaccine. Participants were asked to indicate the impact of COVID-19 on their diet, physical activity, physical health, mental health, and social health. The results indicated that a majority of participants felt COVID-19 had no impact (Figure 1). More participants indicated an improvement versus a decline in diet, physical activity, and physical health whereas more participants indicated a decline versus an improvement in their mental and social health.

Age groups and COVID-19 Impact Statements

An examination of the data by age groups and COVID impact statements revealed that significant differences were obtained in the age groups for only mental health, $F(7, 381) = 3.45$, $p < .01$. Tukey's post-hoc tests indicated several differences were obtained within the groups, where participants ages 40-44 differed from 55-59, 45-49 differed from ages 70 or more, and 40-44 differed from ages 70 or more (Table 5). No other differences in age groups and COVID impact statements were obtained.

Open-Ended Questions

Table 6 presents comment themes for the open ended question on other impacts of the COVID-19 pandemic. Four themes emerged on the impact of COVID-19 on health and well-being: impact on physical and mental health, impact on social health, physical symptoms, and resilience.

With 59 teams competing at the 2022 Masters Hockey World Cup and an average of about 16-18 athletes per team for a total of about ,600 athletes, the overall response rate was 15.0%. With 308 respondents out of 83 teams and approximately 1400 athletes at the main venue in Cape Town, the response rate was 22.0%.

Table 1: Participant demographic information.

Variable	n (%)
Gender	
Women	188 (48.3)
Men	203 (51.7)
Age	
35 to 39	25 (6.4)
40 to 44	29 (7.4)
45 to 49	30 (7.7)
50 to 54	54 (13.8)
55 to 59	66 (16.9)
60 to 64	83 (21.2)
65 to 69	66 (16.9)
70 and above	29 (7.4)
Missing data	9 (2.3)
Education (highest level)	
Less than Secondary	1 (0.3)
High/Secondary School	18 (4.6)
Some College	32 (8.2)
Trade/Technical/Vocational	29 (7.4)
Bachelor's Degree	118 (30.2)
Some Postgraduate Work	32 (8.2)
Master's Degree	85 (21.7)
Professional/Doctoral Degree	75 (19.2)
Type of Employment	
Retired	88 (22.5)
Business/Finance/Marketing	55 (14.1)
Education	55 (8.7)
Management/Administration	46 (11.8)
Other (legal, hospitality, construction, government)	46 (11.8)
Health Care	45 (11.5)
Sport Coach/Admin/Umpire	22 (5.6)
Computing/IT	22 (5.6)
Architect/Engineer/Surveyor	18 (4.6)
Sales/Service	17 (4.3)
Country of Residence	
England	81 (20.7)
United States	73 (18.7)
Australia	54 (13.8)
Scotland	43 (11.0)
Ireland	23 (5.9)
South Africa	19 (4.9)
Wales	19 (4.9)
Netherlands	18 (4.6)
Germany	13 (3.3)
France	12 (3.1)
Chile	6 (1.5)
Malaysia	5 (1.3)

Spain	5 (1.3)
Other	20 (5.1)

Table 2: Participants perceived health by number (%).

Age Groups	How would you rate your current health?			
	Fair	Good	Very Good	Excellent
35 to 39 (n = 25)	0 (0.0)	5 (20.0)	16 (64.0)	4 (16.0)
40 to 44 (n = 29)	1 (3.4)	5 (17.2)	17 (58.6)	6 (20.7)
45 to 49 (n = 30)	1 (3.3)	7 (23.3)	17 (56.7)	5 (16.7)
50 to 54 (n = 54)	4 (7.4)	6 (11.1)	33 (61.1)	11 (20.4)
55 to 59 (n = 66)	0 (0.0)	15 (22.7)	26 (39.4)	25 (37.9)
60 to 64 (n = 83)	1 (1.2)	16 (19.3)	40 (48.2)	26 (31.3)
65 to 69 (n = 66)	4 (6.1)	9 (13.6)	31 (47.0)	22 (33.3)
70 and more (n = 29)	0 (0.0)	5 (17.2)	16 (55.2)	8 (27.6)
Total (n=382)	11 (2.9)	68 (17.8)	196 (51.3)	107 (28.0)

Table 3: Perceived stress levels by number (%).

Age Groups	How often do you feel this kind of stress?				
	Not at all	Rarely	Sometimes	Usually	Very much
35 to 39 (n = 25)	2 (8.0)	11 (44.0)	9 (36.0)	1 (4.0)	2 (8.0)
40 to 44 (n = 29)	2 (6.9)	11 (37.9)	14 (48.3)	1 (3.4%)	1 (3.4%)
45 to 49 (n = 30)	6 (20.2)	10 (33.3)	12 (40.0)	2 (6.7)	0 (0.0)
50 to 54 (n = 54)	6 (11.1)	20 (37.0)	21 (38.9)	7 (13.0)	0 (0.0)
55 to 59 (n = 66)	11 (16.7)	28 (42.4)	25 (37.9)	2 (3.0)	0 (0.0)
60 to 64 (n = 83)	13 (15.7)	40 (48.2)	26 (31.3)	4 (4.8)	0 (0.0)
65 to 69 (n = 66)	11 (16.7)	26 (39.4)	24 (36.4)	5 (7.6)	0 (0.0)
70 and more (n = 29)	6 (20.7)	17 (58.6)	6 (20.7)	0 (0.0)	0 (0.0)
Total (n=382)	57 (14.9)	163 (42.7)	137 (35.9)	22 (5.8)	3 (0.8)

Table 4: COVID-19 vaccination status and illness.

COVID-19 Vaccination & Illness	n (%)
Have Received at Least 1 Booster	316 (80.8)
Have Not Received a Vaccine	3 (0.8)
Have Had Covid Once	223 (57.0)
Have Had Covid More Than Once	40 (10.2)
Have Not Had Covid to My Knowledge	81 (20.7)
Other: Had 2, 3, or 4 doses	20 (5.1)

Table 5: Age groups by perceived COVID-19 impact.

Age Groups	Diet	Physical Activity	Physical Health	Mental Health	Social Health
1. 35 to 39 (n = 25)	1.88 (.66)	1.72 (.67)	2.28 (.67)	1.92 (.64)	2.44 (.65)
2. 40 to 44 (n = 29)	2.17 (.65)	1.93 (.70)	2.45 (.63)	2.03 (.62)	2.31 (.60)
3. 45 to 49 (n = 30)	1.97 (.55)	2.10 (.75)	2.40 (.56)	2.03 (.71)	2.37 (.49)
4. 50 to 54 (n = 54)	1.87 (.58)	1.81 (.72)	2.11 (.60)	1.93 (.69)	2.15 (.59)
5. 55 to 59 (n = 66)	1.89 (.53)	1.82 (.65)	2.06 (.55)	1.89 (.61)	2.15 (.58)
6. 60 to 64 (n = 83)	1.88 (.47)	1.83 (.60)	2.13 (.51)	1.94 (.57)	2.25 (.58)
7. 65 to 69 (n = 66)	1.94 (.34)	1.88 (.62)	2.11 (.43)	2.02 (.54)	2.27 (.51)
8. 70 and more (n = 29)	1.83 (.46)	1.86 (.58)	1.93 (.37)	1.86 (.44)	2.03 (.42)
F value and Sig.	1.34	.88	.46	3.45*	1.75
Sig. different groups				2-5 2-8 3-8	

* p < .001

Table 6. Themes and comments for the open-ended question, What impact did COVID-19 have on your health and well-being? (number of participants who responded).

Theme 1: Impact on Physical and Mental Health (n = 14)

- I'm self employed so it hit my finances hard and this severely impacted my mental health
- I think it made me more aware of a lack of attention I was giving to my physical and mental health. I think it got worse to begin with.
- More responsibility for parent as their mental/physical health declined so less free time. More selective in friendships

Theme 2: Impact on Social Health (n = 20)

- Felt very isolated
- Lack of contact with my children and grand children
- Reduced social interaction. Partly caused early retirement

Theme 3: Physical Symptoms (n = 20)

- Fatigue, headache, tinnitus
- I had it recently and my motor skills seem reduced since
- I seem to be a lot more tired these days and life seems overwhelming

Theme 4: Resilience (n = 14)

- I had to work through the pandemic but I have me a sense of perspective and allowed me to work from home = better work life balance
- The lockdown encouraged me to take on new activities which I have now maintained
- I like to see the positive, I taught my differently abled brother to cook

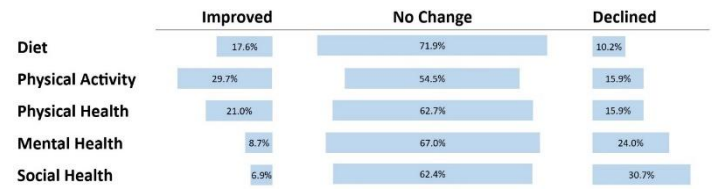


Figure 1: Participants' perceptions of impact of the COVID-19 pandemic on diet, physical activity, and health.

DISCUSSION

The purpose of this study was to examine perceived impacts of the COVID-19 pandemic on the health and well-being of athletes participating in the 2022 Masters Field Hockey World Cup. The results of the present study indicate that in general, participants perceived their current health to be "very good" or "excellent", and their current level of stress as "rare" or "sometimes." Only 3 participants reported not ever having had a COVID-19 vaccine, which is not surprising given the requirements to the host countries in the months leading up to the World Cup competitions..

Participants' diet and physical activity during the COVID-19 pandemic were predominantly unchanged or improved in the present study. Blom et al. (2021) found no changes in diet or physical activity in the general population in Sweden due to the pandemic, as did Larson et al. (2021) in a systematic review of studies focused on older adults in the general population. In terms of physical health, most participants indicated no impact from the pandemic. For those who did indicate an impact, improvement was cited more frequently than decline.

Quantitative analysis as well as qualitative analysis of participant comments indicated that field hockey athletes perceived a negative impact of the pandemic on their mental health. Geza et al. (2020), in a study of Italian and Swiss athletes indicated that 35% of Italian athletes and 28% of Swiss athletes reported lack of motivation and energy loss. Similar results were obtained by Pellino et al. (2020) who found an impact of COVID-19 on elite athletes' mental health, which was linked to psychological distress, anxiety, and stress, however impacts were less pronounced in the athletes versus the general population.

Potential differences amongst age groups on the impact of COVID-19 on diet, physical activity, physical health, mental health, and social health were also examined in this study. The only significant differences noted were in regards to mental health, with younger age groups reporting greater declines in mental health than older age groups. Amongst the general population in Sweden, Blom et al. (2021) also found greater impacts on mental health, anxiety and depression in particular, in those younger than 60 years of age.

In general, participant's perceived health during the World Cup was predominantly (almost 80%) very "good" to "excellent", which appears to match up with participants' ratings of physical health at the time of the pandemic. In terms of mental health, participants generally reported no change or a decline during the pandemic. With very few (6%) participants reporting their frequency of stress during the World Cup as "usually" or "very much" and open-ended comments indicating better life balance, seeing the positive, and changing their perspective,

it appears in some cases that participants were able to recover from the negative impacts of the pandemic on mental health.

While this study was the first to examine the impact of the COVID-19 pandemic on health and lifestyle behaviors of masters field hockey athletes, there are some limitations to address and recommendations to be made. First, as with any self-report survey, recall bias can be an issue. Second, in addition to conducting the survey during a major competition, it would have been ideal to query participants during the actual pandemic as well. Third, this study examined differences among age groups in health and lifestyle variables; future studies of this nature should also examine additional demographic variables (gender, residential location, educational level, household income), health variables (illnesses, injuries), and lifestyle variables (type of diet, physical activity levels). Fourth, the same questions that were asked in terms of physical, mental, and social health during the pandemic period could be asked later at the time of competition for actual comparisons. A final recommendation would be to increase the sample size through increased recruitment efforts at all Masters Hockey World Cup sites.

CONCLUSION

This study examined COVID-19 impacts on the diet, physical activity, physical health, mental health, and social health of athletes competing in the 2022 Masters Field Hockey World Cup. In general, these athletes fared well overall with diet, physical activity, and physical health. With more decline than improvement reported during the pandemic, there should be a focus on supporting mental and social health of masters field hockey athletes.

Disclosure

The author reports no conflicts of interest nor financial interest in this work.

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