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Supplements and aids used by athletes participating in the 2022 masters field hockey world cup

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Abstract

Background: Masters athletes, typically aged 35 and older, continue to train and compete at high levels. Like their younger counterparts, they may utilize a variety of supplements, training and recovery aids to enhance their health, performance, and recovery. However, little research has been conducted with the masters athlete population. Aims and Objectives: The purpose of this study was to examine supplement and training and recovery aids used by athletes participating in the 2022 Masters Field Hockey World Cup. Materials and Methods: A total of 471 participants (53.3% male, 46.7% female), from 24 different countries, with a mean age of 57+ 9.9 years (range of 34-84 years) completed the Health and Well-being of Masters Hockey Survey. Results: Significant differences were obtained for health, dietary and performance supplements by gender and age. More females indicated using probiotic, calcium, and iron supplements than males. Participants ages 35-39 and 40-44 indicated greater use of protein/amino acids and pre-workout supplements. For training aids, gender differences were obtained only for compression clothing, with more males reported using than females. With activity trackers, participants in the age group 40-44 reported higher usage than those ages 60 and over and all younger age groups reported higher usage of self-myofascial techniques than those age 70 and older. Conclusions: There were differences by gender and age groups in reported usage of health, dietary and performance supplements by masters hockey athletes competing in the 2022 World Cup. There were also significant differences in the use of training and recovery aids. Additional research into the efficacy of supplements and aids is needed to support the unique needs and challenges faced by masters athletes.

Keywords: Supplements, Performance aids, Training aids, Recovery aids, Masters athletes.

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INTRODUCTION

Masters athletes (those defined typically as aged 35 years or older) systematically train for and compete with organized teams that are specifically designed for older adults with many competitions reaching the national and international levels [1, 2]. While these athletes continue to train and compete at high levels, aging presents a variety of physiological changes that impact training, performance, and recovery [3]. For example, the age that typically defines the masters athlete (~35-40 years of age) is the age that is also associated with a loss of muscle mass and strength/function due to both quantity of skeletal muscle and neuromuscular changes [4]. Additionally, there are documented declines in endurance performance of masters aged athletes related to both central and peripheral factors [5].

Despite performance-related evidence on aging, masters athletes are regarded as successful aging models as they are often healthier than their sedentary counterparts[6]. Furthermore, maintaining a systematic training program that manages both training and recovery can help attenuate age-related performance declines and promote continued healthy participation in sport [1]. A well-designed systematic training program (i.e., chronic exercise) must appropriately manage and apply components of exercise and recovery (e.g. training, nutrition, sleep, and stress management) to preserve and enhance physical function, muscular strength, and healthy body fat levels [7, 8, 9]. Additionally, managing fatigue and recovery from training or competition is desired in order to heal and further adapt to the chronic training stimulus resulting in functional enhancements and preservation of muscle mass for performance [10,11].

Athletes often use a variety of supplements and aids (training and recovery) to help support their training and recovery processes with common goals of performance enhancement, fatigue management, supporting health and well-being, improving recovery, and reducing delayed-onset muscle soreness [4,12,13,14]. The use of supplements and aids is often self-selected based on individual preferences, training and sport requirements, as well as injury and health status [15]. Also, due to the prevalence of different training and recovery strategies, athletes may not be aware of the specific effects that an aid or strategy has on their performance and recovery, and therefore athlete and coach education is an opportunity in this realm [12].

Examples of training aids include external training load monitors such as heart rate monitors, activity trackers, GPS watches, power output measuring devices, and time-motion analysis [16]. Other training aids may support internal load monitoring such as perception of effort, heart rate, blood lactate, training impulse, heart rate recovery, questionnaires and diaries, reaction time, and sleep quantity and quality[16]. For joint and soft tissue support during training and competition, athletes may utilize braces, wraps, athletic taping, and kinesiology taping [17]. Likewise, many recovery aids exist such as self-myofascial release (SMR) techniques (i.e., foam roller), walking and/or jogging, cold water immersion, heat-therapy, compression garments, stretching, and active recovery [18,19,20]. The main mechanism for recovery in these modalities is the increase in blood flow and thus the clearance of metabolic waste products [13, 21].

Since research on recovery aids is a relatively new area of research and the main mechanism underlying these modalities is similar, athletes are encouraged to experiment with various techniques to identify which works best for their situation [21]. Regardless of recovery technique used to support training, emphasis should always first be placed on optimal post-exercise nutrition, adequate sleep, and stress reduction [12,21].

Nutritional strategies (well-balanced diet; eating plan/schedule; adequate hydration; pre, during, and post workout; and competition strategies) are a cornerstone to a well-balanced training program [22]. More specifically, matching energy intake and expenditure is critical to maintaining health and performance [23]. Given the well-known loss of muscle mass that comes with aging adults, it is especially important for masters athletes to consume adequate daily protein intakes of greater than or equal to 1.2 g/kg/day [24]. In addition to a well-designed diet that meets energy intake needs for health, common supplements used to prepare an individual for exercise, improve exercise efficiency, enhance recovery from exercise, or assist in injury prevention include ergogenic aids such as protein powders, energy gels, recovery drinks, creatine, and caffeine [25, 26].

The literature on the use of supplements, as well as training and recovery aids among masters athletes in general is lacking, with endurance athletes being the primary focus and very little research on masters field hockey athletes. The primary purpose of this study was to describe the supplement (health, dietary, performance) and aid (training, recovery) practices that masters hockey athletes used at the time of the 2022 Masters Hockey World Cup. Comparisons among age groups and genders were also explored.

MATERIALS AND METHODS

Participants

Masters hockey athletes (n=471) competing in the Masters Hockey World Cup in 2022 were the participants in this study. World Cup venues included Nottingham, England, Cape Town, South Africa, and Tokyo, Japan. Recruitment efforts centered on postings on the World Masters Hockey website and Facebook page, as well as emails to contacts in participating countries and direct player contact at the venues. The study was approved by the Institutional Review Board at Saint Joseph's College of Maine, with all compliance regulations for research on human subjects adhered to and informed consent completed by all participants. Data was collected just prior to, during, and immediately following the World Cup events.

Measures

The Health and Well-being of Masters World Cup Field Hockey Athletes Survey was the instrument used in this study[27]. The survey was administered via Survey Monkey® and included questions in the following areas: demographics, health status, lifestyle behaviors, field hockey participation, COVID-19, and well-being. Questions specific to demographics, supplements, and training/recovery aids were used in this analysis.

Demographic questions related to age, gender, and country of residence. Supplement use was queried by "Check off any health, dietary, or performance supplements you use" and training and recovery aid use with the question "What training/recovery aids do you currently use? Select all that apply." For both questions, there were options for "Do not use" and "Other", where respondents could list supplements and training/recovery aids they use that were not on the given list.

Data Analysis

Descriptive and inferential statistics were used to analyze data in this study. Frequencies, percentages, and means ($\pm$SD) were used to describe demographics, supplements (health, diet, and performance), and training and recovery aids. One-way analysis of variance (ANOVA) statistics were conducted to determine differences among the variables by gender and age. Significance was set at $p<.05$. Data were analyzed using IBM SPSS Statistics for Windows, Version 25.

RESULTS

There were a total of 471 respondents completing the relevant sections of the survey. Mean age of the sample was 57$\pm$9.9 years, with a range of 34-84 years. There were 251 males (53.3%) and 220 females (46.7%) from 24 different countries, with most respondents being from Australia (n=65), England (n=105), Scotland (n=48), and the United States (n=85). Other participant demographic information is presented in Table 1.

Health, Dietary and Performance Supplements by Gender and Age

Table 2 indicates that significant differences were obtained in health, dietary, performance supplements and gender for the following: Do not use, F (1.470) = 8.50, $p < .01$; probiotic, F (1, 470) = 4.79, $p < .05$; calcium, F (1, 470) = 5.94, $p < .05$; and iron, F (1.470) = 11.41, $p < .01$. No other gender differences were obtained.

Table 3 indicates health, dietary and performance supplements by age groups. The results indicated that significant differences were obtained between age groups for: protein/amino acids, F (7, 466) = 5.94, $p < .01$; energy bar/gel, F (7, 466) = 2.15, $p < .05$; pre-workout, F (7, 466) = 3.17, $p < .01$; and recovery, F (7, 466) = 2.71, $p < .01$. Tukey's post hoc test indicated that several differences were obtained within these groups. For protein/amino acids, participants who were ages 30-34 differed from participants who were in groups ages 55 and above. Participants in ages 50-54 also differed significantly from participants in ages 70 and above. Additionally, for pre-workout, participants ages 35-39 differed from participants ages 45-49, 55-59, 60-64, 65-69, and ages 70 or more. Participants ages 40-44 also differed from those ages 45-49.

Training and Recovery Aids by Gender and Age

Table 4 indicates that significant differences were obtained in training and recovery aids by gender for compression clothing, F (1.470) = 14.82, $p < .01$. No other significant differences were obtained.

Table 5 indicates significant differences in training and recovery aids and age groups were obtained for do not use, F (7, 466) = 3.23, $p < .01$; activity tracker, F (7. 466) = 3.79, $p < .01$, and SMR, F (7, 466) = 4.62, $p < .01$. Tukey's post hoc test indicated that several differences were obtained in age groups. For do not use, participants ages 35-39, 50-54, 55-59, and 60-64 were different from participants ages 70 and over. For activity tracker, participants ages 40-44 were different from all groups over 60 years of age. For SMR, participants in age groups 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64 were significantly different from those who were 70 and above.

Table 1: Participant demographic information

Variable	n (%)
Gender	
Women	220 (46.7)
Men	251 (53.3)
Age	
35-39 years	30 (6.4)
40-44 years	34 (7.2)
45-49 years	37 (7.9)
50-54 years	65 (13.8)
55-59 years	89 (18.9)
60-64 years	100 (21.2)
65-69 years	69 (14.6)
70-74 years	43 (9.1)
Missing	4 (0.8)
Education (highest level)	
Less than Secondary	1 (0.2)
High/Secondary School	23 (4.9)
Some College	37 (7.9)
Trade/Technical/Vocational	33 (7.0)
Bachelor's Degree	143 (30.4)
Some Postgraduate Work	37 (7.9)
Master's Degree	98 (20.8)
Professional/Doctoral Degree	98 (20.8)
Type of Employment	
Retired	101 (21.4)
Business/Finance/Marketing	39 (8.3)
Education	59 (12.5)
Management/Administration	55 (11.7)
Health Care	51 (10.8)
Sport Coach/Admin/Umpire	26 (5.5)
Computing/IT	30 (6.4)
Architect/Engineer/Surveyor	21 (4.5)

Sales/Service	21 (4.5)
Other	20 (4.2)
Art/Design/Performance	7 (1.5)
Legal	8 (1.7)
Researcher/Scientist	6 (1.3)
Manufacturing/Construction/Maint	3 (0.6)
enance	7 (1.4)
Government/Police/Fire/Rescue	6 (1.3)
Hospitality	2 (0.4)
Social Service	2 (0.4)
Military	
Household Income (USD)	
<20,000	18 (3.8)
20,000-39,999	45 (9.6)
40,000-59,999	57 (12.1)
60,000-79,999	40 (8.5)
80,000-99,999	58 (12.3)
100,000-119,999	51 (10.8)
120,000-139,999	43 (9.1)
140,000-159,999	27 (5.7)
160,000-179,999	20 (4.2)
180,000-199,000	13 (2.8)
200,000 or greater	69 (14.6)
Missing Data	30 (6.4)

Table 2: Health, dietary and performance supplements by gender

	Gender **n (%)**		
Health, Dietary and Performance Supplements	**Male (n = 251)**	**Female (n = 220)**	***F* value and Sig.**
Do not use (n = 189)	115 (45.8)	72 (38.5)	8.50 **
Vitamin D (n = 90)	42 (16.7)	48 (21.8)	1.96
Multivitamin/Mineral (n = 84)	46 (18.3)	38 (17.3)	.08
Fish Oil (n = 79)	42 (16.7)	37 (16.8)	.00
Sports Drink (n = 65)	35 (13.9)	30 (13.6)	.00
Protein/Amino Acids (n = 56)	23 (9.2)	33 (15.0)	3.82

Glucosamine (n = 53)	28 (11.2)	25 (11.4)	.00
Probiotic (n = 34)	12 (4.8)	22 (10.0)	4.79 *
Calcium (n = 31)	10 (4.0)	21 (9.5)	5.94*
Energy Bar/Gel (n = 31)	18 (7.2)	13 (5.9)	.30
Recovery (n = 28)	13 (5.2)	15 (6.8)	.56
Coenzyme/Antioxidants (n = 22)	16 (6.4)	6 (2.7)	3.54
Pre-workout (n = 19)	9 (3.6)	10 (4.5)	.27
Iron (n = 19)	3 (1.2)	16 (7.3)	11.40 **
Creatine (n = 12)	7 (2.8)	5 (2.3)	.12

* $p < .05$, ** $p < .01$

Table 3: Health, dietary and performance supplements by age group

	Age Groups n (%)								***F* value**	**Sig. Diff. Groups**
Health, Dietary and Performance Supplements	**1. 35 to 39 (n = 30)**	**2. 40 to 44 (n = 34)**	**3. 45 to 49 (n = 37)**	**4. 50 to 54 (n = 65)**	**5. 55 to 59 (n = 89)**	**6. 60 to 64 (n =100)**	**7. 65 to 69 (n = 69)**	**8. 70 and more (n = 43)**		
Do not take (n = 185)	10 (33.3)	11 (32.4)	16 (43.2)	21 (32.3)	38 (42.7)	39 (21.1)	29 (42.0)	21 (48.8)	.70	
Vitamin D (n = 89)	4 (13.3)	4 (11.8)	8 (21.6)	14 (21.5)	17 (19.1)	24 (24.0)	11 (15.9)	7 (16.3)	.63	
Multivitamin Mineral (n = 84)	11 (36.7)	6 (17.6)	9 (24.3)	12 (18.5)	16 (18.0)	16 (16.0)	9 (13.0)	4 (9.3)	1.70	
Fish Oil (n = 79)	6 (20.0)	6 (17.6)	2 (5.4)	11 (16.9)	12 (13.5)	21 (21.0)	14 (20.3)	7 (16.3)	.88	
Sports Drink (n = 65)	8 (26.7)	6 (17.6)	6 (16.2)	8 (12.3)	7 (7.9)	11 (11.0)	10 (14.5)	9 (20.9)	1.43	
Protein, Amino Acids (n = 56)	10 (33.3)	10 (29.4)	5 (13.5)	12 (18.5)	7 (7.9)	10 (10.0)	0 (0.0)	0 (0.0)	5.94 **	1-5, 1-6, 1-7, 1-8, 2-5, 2-6 2-7, 2-8 4-7
Glucosamine (n = 53)	1 (3.3)	2 (5.9)	2 (5.4)	3 (4.6)	11 (12.4)	16 (16.0)	12 (17.4)	6 (14.0)	1.75	
Probiotic (n = 33)	1 (3.3)	1 (2.9)	3 (8.1)	6 (9.2)	5 (5.6)	10 (10.0)	7 (10.1)	0 (0.0)	1.12	

	Age Groups n (%)								*F* value	Sig. Diff. Groups
Energy Bar/Gel (n = 31)	3 (10.0)	3 (8.8)	1 (2.7)	8 (12.3)	9 (10.1)	7 (7.0)	0 (0.0)	0 (0.0)	2.15 *	
Calcium (n = 30)	1 (3.3)	2 (5.9)	3 (8.1)	3 (4.6)	4 (4.5)	8 (8.0)	8 (11.6)	1 (2.3)	.89	
Recovery (n = 28)	2 (6.7)	5 (14.7)	4 (10.8)	8 (12.3)	5 (5.6)	4 (4.0)	0 (0.0)	0 (0.0)	2.71 **	1-2
Coenzyme/Antioxidants (n = 22)	0 (0.0)	2 (5.9)	2 (5.4)	1 (3.1)	5 (5.6)	3 (3.0)	3 (4.3)	0 (0.0)	.80	
Pre-workout (n = 19)	5 (16.7)	4 (11.8)	0 (0.0)	3 (4.6)	2 (2.2)	3 (3.0)	1 (1.4)	1 (2.3)	3.17 **	1-3, 1-5 1-6, 1-7 1-8, 2-3
Iron (n = 19)	2 (6.7)	3 (8.8)	1 (2.7)	1 (1.5)	3 (3.4)	4 (4.0)	4 (5.8)	1 (2.3)	.66	
Creatine (n = 12)	2 (6.7)	2 (5.9)	2 (5.4)	2 (3.1)	2 (2.2)	1 (1.0)	0 (0.0)	0 (0.0)	1.34	

* $p < .05$; ** $p < .01$

Table 4: Training and recovery aids by gender

	Gender n (%)		
Training/Recovery Aid	**Male (n = 251)**	**Female (n = 220)**	***F* value and Sig.**
Do not use (n = 108)	60 (23.9)	49 (22.2)	.17
Activity Tracker (n = 216)	111 (44.2)	105 (47.7)	.57
SMR (Foam roller, massage ball, massage stick, massage gun) (n = 195)	99 (39.4)	96 (43.6)	.84
Compression Clothing (n = 112)	77 (30.7)	35 (15.9)	14.82**
Cold Therapy (Ice pack/Wrap, Ice bath) (n = 89)	34 (13.5)	55 (25.0)	.79
Heat Therapy (hot tub/Jacuzzi, hot pack) (n = 73)	37 (14.7)	36 (16.4)	.67
Sport/Kinesiotape (n = 49)	20 (8.0)	29 (13.2)	3.42
Electrical Stimulation (n = 25)	16 (6.4)	9 (4.1)	1.21
Sauna/Steam (n = 18)	12 (4.8)	6 (2.7)	1.34
Compression/pump boots (n = 14)	6 (2.4)	8 (3.6)	.62
CBD (n = 8)	3 (1.2)	5 (2.3)	.81

* $p < .05$, ** $p < .01$

Table 5: Training & recovery aids by age groups

	Age Groups n (%)								*F* value	Sig. Different Groups
Training/ recovery Aids	**1. 35 to 39 (n = 30)**	**2. 40 to 44 (n = 34)**	**3. 45 to 49 (n = 37)**	**4. 50 to 54 (n = 65)**	**5. 55 to 59 (n = 89)**	**6. 60 to 64 (n =100)**	**7. 65 to 69 (n = 69)**	**8. 70 and more**		
Do not use (n = 108)	2 (6.7)	9 (26.5)	9 (24.3)	10 (15.4)	20 (22.5)	19 (19.0)	19 (27.5)	20 (46.5)	3.23**	1-8, 4-8, 5-8, 6-8
Activity Tracker (n = 215)	18 (60.0)	23 (67.6)	18 (48.6)	38 (58.5)	45 (50.6)	35 (35.0)	25 (36.2)	13 (30.2)	3.79**	2-6,2-7 2-8
SMR (Foam roller, massage ball, massage stick, massage gun) (n = 192)	17 (56.9)	17 (50.0)	17 (45.9)	36 (55.4)	35 (39.3)	44 (44.0)	22 (23.2)	4 (9.3)	4.81**	1-8, 2-8 3-8, 4-8 5-8, 6-8
Compression Clothing (n = 111)	10 (33.3)	6 (17.6)	10 (27.0)	19 (29.2)	24 (27.0)	19 (19.0)	16 (23.2)	7 (16.3)	.94	
Cold Therapy (Ice wrap, ice bath) (n = 89)	7 (23.3)	8 (23.5)	6 (16.2)	14 (21.5)	21 (23.6)	18 (18.0)	11 (15.9)	4 (9.3)	.71	
Heat Therapy (Hot tub/Jacuzzi) (n = 73)	6. (20.0)	5 (4.7)	5 (13.8)	13 (20.0)	9 (10.1)	17 (17.0)	13 (8.8)	5 (11.6)	.96	
Sport/ Kinesiotape (n = 49)	2 (6.7)	4 (11.8)	4 (10.8)	9 (13.8)	7 (7.9)	11 (11.0)	11 (15.9)	1 (2.3)	1.03	
Electrical Stimulation (n = 25)	2 (6.7)	2 (5.9)	2 (5.4)	2 (3.1)	5 (5.6)	5 (5.0)	6 (8.7)	1 (2.3)	.44	
Sauna/ steam (n = 18)	3 (10.0)	2 (5.9	1 (2.7)	0 (0.0)	1 (1.1)	6 (6.0)	1 (1.4)	4 (9.3)	1.98	
Compression/ pump boots (n = 14)	0 (0.0)	2 (5.9)	2 (5.4)	2 (3.1)	2 (2.2)	5 (5.0)	1 (1.4)	0 (0.0)	.86	
CBD (n = 8)	2 (6.7)	1 (2.9)	0 (0.0)	1 (1.5)	1 (1.1)	3 (3.0)	0 (0.0)	0 (0.0)	1.20	

* $p < .05$, ** $p < .01$

DISCUSSION

The aims of this study were to describe supplement (health, dietary, and performance) and aid (training and recovery) use among masters hockey athletes who participated in the 2022 World Cup, and to examine any differences in use among gender and age groups. Findings from this study indicate the use of a variety of supplements and training and recovery aids, as well as some differences among gender and age groups.

The primary health, dietary and performance supplements used by masters hockey athletes in this study were Vitamin D, multivitamin/multimineral, fish oil, sports drinks, protein/amino acids, and glucosamine. More males (46%) reported not using supplements than females (39%), whereas more females reported taking probiotic, calcium, and iron supplements. Younger age groups (35-39 and 40-44) reported greater use of protein/amino acid, recovery, and pre-workout supplements.

The differences of supplement usage between age groups and gender may speak to the motivational drivers for consuming supplements. For example, it has been noted that elite athletes typically use supplements to increase their athletic performance and masters athletes predominantly consume supplements to enhance their health [28]. In a recent review, it was found that older masters athletes were more likely to utilize supplements for health reasons while younger athletes utilized supplements for athletic performance [26]. Additionally, in a study on leisure-time athletes, the main motivator for consuming supplements was for preservation of health, followed by improving physical well-being, protecting cartilage, increasing muscle mass, and finally enhancing performance [29]. In another study, younger males in the general population utilize protein supplements more than older populations [26].

In this study, respondents who reported the highest usage of dietary supplements for health-promoting purposes were women (66.7%) in the 35-44 age group (48.1%). In an older study [30] on Masters Championships Athletes, 60.5% of athletes reported supplement use, with vitamins and minerals being the most cited supplement group. In the present study, multivitamin/multimineral supplementation was the second most commonly used supplement with 54% of males and 61% of females reporting supplement use.

Increased consumption of Vitamin D is commonly recommended for both the general population and athletes, particularly in geographical regions where climate might limit time outdoors [26]. Vitamin D is important for bone health, but also for skeletal muscle growth, immune, and cardiopulmonary functions, all of which modulate athletic performance [31]. A study of masters athletes participating in the Australian (2017) and Pan-Pacific (2018) Masters Games, found sports drinks and multivitamin/multimineral supplements to be the most commonly reported supplements used [29].

There is some evidence for fish oil supplementation, specifically for omega-3 fatty acid content, can positively impact cardiovascular health, a major concern amongst older populations. Given this evidence and the difficulty in obtaining necessary amounts of omega-3 fatty acids in the diet, fish oil supplements are commonly consumed [25]. Close to 17% of participants in this study reported using fish oil supplements, much lower than the 31% reported by a large similar aged cohort in the UK Biobank study [32].

In the present study, the 4th and 5th most reported supplements used by participants were sports drinks (13.8%) and protein/amino acids (11.8%). Evidence suggests that sports drink consumption is effective in preventing dehydration and improving cardiovascular performance in a hot, humid environment [25]. Evidence exists on the importance of protein intake amongst athletes of all ages and especially intake above the existing RDA's. While the recommendation is to consume high-quality protein in the diet, there may be instances where amino acid or protein supplementation is needed. Post-workout consumption of protein has also been shown to stimulate protein synthesis and reduce protein breakdown in muscles [25].

In the present study, 78% of masters hockey athletes reported using some type of training or recovery aid, with activity trackers, SMR, compression clothing, cold therapy, and heat therapy being the most utilized. The only significant gender difference was with compression clothing ($p < .01$), with more men (31%) reporting use versus women (16%). In terms of age groups, more participants aged 70 years and older reported not using any training or recovery aids and more participants in all age groups under age 70 reported utilizing SMR more than those over age 70. For activity trackers, the 40–44-year group reported significantly greater usage than those age 60 and older.

Wearable technology like fitness trackers was the top fitness trend for 2024 according to ACSM's most recent Worldwide Survey of Fitness Trends article, continuing to trend in the top 3 Worldwide Surveys [33]. Fitness trackers are used for a variety of reasons like monitoring daily physical activity, performance during training, ways to train smarter and evaluate performance, intensity and duration of workouts, and self-monitoring [34-35]. In the present study, approximately 46% of masters hockey athletes reported utilizing an activity tracker as a training aid. This is greater than the 29% found in a recent study on U.S. Masters field hockey athletes competing in the 2018 World Cup reported utilizing an activity tracker [27], the 25.8% reported by [36] and the 21% of Americans who report using a smartwatch or fitness tracker [37]. While there were no gender differences in activity tracker usage in the present study, more women (25%) reported using an activity tracker than men (18%) in a recent survey [37].

SMR is commonly used by athletes to increase range of motion [38]. Just over 40% of the masters hockey athletes participating in the present study reported using some form of SMR, which included the use of a foam roller, massage stick, massage ball and massage gun. This number is significantly lower than the 72% of basketball practitioners who reported using foam rolling as a recovery strategy in a recent study [39]. However, the range of ages in this study [39] was 21-40 years whereas the masters athletes in the present study ranged in age from 34-84 years.

In the present study, 23.5% of participants reported using compression clothing as a recovery aid. In a recent study on athletes (primarily runners) who use compression clothing [40], 59% utilized sport compression socks primarily for secondary injury prevention and 15% for support of a current injury, while 43% reported facilitation of post-exercise recovery.

LIMITATIONS AND FUTURE RECOMMENDATIONS

While this study had several strengths, there are limitations to address. First, the nature of self-report surveys introduces the potential for recall bias. Second, the survey was administered in English and Spanish; future surveys should address additional European (Dutch, French, German, Italian, etc.) and Asian languages (Russian, Malay, Japanese, etc.). Third, future marketing efforts could be aimed at ensuring more equitable age group respondents (i.e., younger age groups) and larger sample sizes. Finally, this study focused on broad categories of supplements and aids; it is recommended that future research examine more subcategories of supplements and aids (e.g., type of compression garment).

CONCLUSION

This study examined the supplement and aid (training, recovery) practices of athletes competing in the 2022 Masters Hockey World

Cup. Significantly more females reported intake of calcium, iron and probiotic supplements, while more males utilized compression clothing. Younger age groups were more likely to use protein/amino acid and pre-workout supplements, as well as activity trackers and SMR techniques. Additional research on the efficacy of various supplement and aids currently used by masters athletes would assist in the development of both general and specific recommendations.

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Conflict of interest

The authors reports no conflicts of interest.

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