

Effects of Covid-19 Pandemic Confinement on Training Sessions and Activities Resumption Among 91 Amateur Athletes in Dakar (Senegal).

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Abstract: Most of the studies concerning the containment linked to the COVID-19 pandemic in sports have mainly concerned the behavioral changes of Caucasian athletes regarding their training methods, while the restrictions and perceptions vary according to socio-cultural contexts. The aim of this study was to report the perceptions of Senegalese amateur athletes on the resumption of sports activities and the frequency of training during the confinement period. A survey was conducted from December 14th, 2020 to June 30th, 2021, among amateur athletes over the age of 18 in the city of Dakar, in three sports disciplines. The data was collected using a questionnaire available in physical form and Google Forms, providing information on perceptions related to the resumption of sports and the frequency of training during the confinement period. We recorded 69.2% of athletes who wanted to resume sports activities without interruption during the confinement period. The proportion of athletes who trained daily (37.4%) was similar to the proportion of athletes who trained less than three days per week (37.4%). The cessation of the practice of sport was found mainly in the male gender in team sports. The majority of Senegalese amateur athletes agreed to resume training during the pandemic period.

Keywords: COVID-19; confinement; perceptions; training; amateur athletes; Dakar.

1. INTRODUCTION

COVID-19 is a pathology mainly affecting the respiratory system. The measures aimed at fighting it, such as confinement, have also led to obvious economic damage and restrictions on activities of various kinds, including sports activities [1–4]. The postponement of some competitions (Tokyo Olympic and Paralympic Games, the European Football Cup, the African Cup of Nations) or the closure of sites allocated for the practice of physical activities constituted measures aimed at limiting the spread of this pandemic [5]. Faced with these restrictions, athletes were therefore obliged to continue training at home, alone or accompanied digitally, with or without equipment [6,7]. There were many hesitations about indulging in sports during the confinement period [6,7]. Wearing a mask during sports, safe distancing between mates for team sports, the duration of training sessions and the intensity of exercises, are all elements on which the scientific community, together with the sports community, had to look for a serene resumption of training and competitions to be put in place [5,8–11]. Having had all these discussions in agreement, they did not necessarily satisfy the athletes, who, according to Washif *et al.* [12], mainly wanted to maintain their training programs during this period.

In Senegal, the competent authorities, in a response plan to this pandemic, as of March 23rd, 2020, declared a state of emergency, along with a curfew from 8 p.m. to 6 a.m. This night curfew was eased at the end of May 2020 and then lifted a month later. During this period, the main sites of public gathering had been closed [13]. From January to March 2021, following the increase in the number of new positive cases for this pathology, a new state of emergency was declared, followed by a state of

disaster [14]. These various measures, however beneficial from a health point of view, have probably frustrated and demotivated athletes, the technical staff and the entire Senegalese sports community. Very little number of studies in Sub-Saharan Africa has had the interest of reporting the perceptions of athletes on the issue of returning to sports practice during the period of confinement as well as their attendance at training. These elements are the subject of this article among Senegalese amateur athletes in three disciplines: basketball, sprint races and rugby.

2. METHODS

A cross-sectional, prospective and analytical study was carried out from December 14th, 2020 to June 30th, 2021, on Senegalese amateur athletes in the city of Dakar, from 3 sports disciplines (basketball, sprint races, and rugby). On the basis of a non-probability consecutive sampling, Senegalese athletes of both sexes, being at least 18 years of age (civil majority in Senegal) and belonging to the amateur league of the aforesaid sports disciplines were included. Participants who did not complete the entire physical questionnaire and those who completed it more than once online were excluded. A favorable opinion from the Ethics and Research Committee of the Cheikh Anta Diop University of Dakar (CER/UCAD/AD/MsN/012/2020), then research authorizations from the National Institute of Sport and Popular Education of Senegal (INSEPS) and the Senegalese Federations of Athletics (FSA) and Basketball (FSBB) have been granted. The basketball players were recruited at the Marius Ndiaye stadium (where most of the first and second division clubs of the Dakar league train), at the basketball court of the Derklé Center and at INSEPS. Regarding the sprinters, the Iba Mar Diop and Léopold Sedar Senghor stadiums were the recruitment sites. Rugby teams were recruited at INSEPS. The questionnaire we designed was inspired by that of the study by Pillay *et al.* [15]. The parameters evaluated included the perception of amateur athletes on the return to sports practice and championships, the frequency of training and the cessation of the practice of sports activities, during the period from March to June 2020. This questionnaire was available in paper version and online on Google Forms (Alphabet Inc, Mountain View, California, United States). It consisted of single-response questions and multiple-response questions. The physical questionnaires were administered from March 1st to April 29th, 2021 and the missing copies were collected during the first week of May 2021. The online questionnaire required the email address of the participants in order to avoid duplicates. It was accessible from March 1st to May 1st, 2021 at midnight. At the end of the training sessions, the principal investigator approached the athletes of the different disciplines. All participants were informed of the study objectives, which complied with the ethical principles contained in the 2013 revised Declaration of Helsinki [16], before giving their written consent to participate in the study. The questionnaire's filling was done directly at the place of the meeting, at home or online. Responses to the questionnaire in physical form were entered and saved on the form of Google Forms (Alphabet Inc, Mountain View, California, United States). The answers to the questions of the participants who answered on the online form were already recorded there. From Google Forms, we extracted the data, which was corrected and coded on an Excel sheet (Microsoft Office 2016, USA). They were then exported to Stat View v5.03 (SAS Institute, Inc., IL, USA) and GraphPad v7.03 (GraphPad PRISM, Inc., San Diego, IL, USA), for statistical analysis. Qualitative and quantitative variables were presented as percentages and mean \pm standard deviation (SD), respectively. Fisher's and Pearson's chi-square tests of independence were used to compare percentages. The student's test on unpaired series was used to compare the mean values of the quantitative variables. The multivariate logistic regression was used to identify the factors associated with the different dependent variables of interest during the months of March to June (confinement period). The significance threshold was set at $p < 0.05$.

3. RESULTS

3.1 Socio-demographic characteristics

The population of our study consisted of 91 athletes with a predominance of the male gender (59.3%). Basketball was the most represented sports discipline (64.8%), followed by rugby (23.1%) and sprint races (12.1%). The average age was 24 ± 4 years. We recruited 66 athletes (72.5%) who were at the college level (college level). About 94.5% of all athletes were single (Table 1).

Table 1. *Sociodemographic characteristics*

Effects of covid-19 pandemic confinement on training sessions and activities resumption among 91 amateur athletes in Dakar (Senegal).

Variables		Frequency	Proportion (%)
Gender	Male	37	40.7
	Female	54	59.3
Age (years)	< 21	15	16.5
	[21 - 25]	58	63.7
	> 25	18	19.8
Mean age (years)	24 ± 4		
Median age (years)	24		
Level of study	Primary School	1	1.1
	Highschool	24	26.4
	College	66	72.5
Marital status	Bachelor	86	94.5
	Married	5	5.5
	Divorced	0	0
Sports disciplines	Basketball	59	64.8
	Sprint races	11	12.1
	Rugby	21	23.1

Data are presented in size, percentages and means ± standard deviation. The Chi square and the student tests on unmatched series have been used. * The significance threshold was set at p<0.05.

3.2 Perceptions about the resumption of competition during the confinement period

We recorded 25 athletes (27.4%) who thought they could resume championships within one to three months (Table 2). They were 63 (69.2%), wanting to resume their sports activities without interruption during the confinement period. Less than 20% (N= 17; 18.7%) of athletes agreed with this interruption, whilst 11 (12.1%) were hesitant. These last two components of the population agreed at 37.1% on the certainty that health measures had been taken concerning their protection against the virus, in order to resume their activities calmly during the period from March to June 2020.

Table2. Perceptions of athletes about the resumption of sporting activities during the confinement period.

Variables		Frequency	Proportion (%)
Perceptions about the resumption of championships (Frequency = 91)	1 month	10	11.0
	1 to 3 months	25	27.4
	3 to 6 months	23	25.3
	More than 6 months	11	12.1
	Unknown	22	24.2
Resumption of sports during the confinement period (Frequency = 91)	No	17	18.7
	Yes	63	69.2
	Maybe	11	12.1
If no or maybe, explainable reasons (frequency = 28)	A	10	35.7
	A + B	3	10.7
	A + B + E	0	0
	A + C	1	3.6
	A + C + E	1	3.6
	A + E	2	7.1
	B	2	7.1
	B + C	0	0.0
	B + D + E	0	0.0
	B + E	2	7.1
	C	0	0.0
	D	5	18

Data are presented in size and percentages. The Fisher and Chi square tests have been used.

* The significance threshold was set at p<0.05.

A= I am assured that protocols have been put in place to significantly reduce my chances at contracting the virus ; B = Risks must be reduced 100% ; C= My sporting federation and government must be happy with guidelines to protect athletes ; D= The international sporting world must be moving in the same direction ; E= I am enabled financially or equipment-wise by my federation to take the precautionary measures implemented.

3.3 Training frequency

Athletes trained adequately both daily (37.4%) and in less than three days (37.4%) during the week. Athletes training every other day during the week were the least represented (N=23; 25.3%) (Table 3).

Table 3. Training frequency of athletes during the confinement period.

Variables		Frequency	Proportion (%)
Training frequency	Daily	34	37.4
	less than trice a week	34	37.4
	Every other day	23	25.3

Data are presented in size and percentages. The Fisher and Chi Square tests have been used.

* The significance threshold was set at $p < 0.05$.

3.4 Cessation of sports practice

Sprinters did not stop practicing their sport during the confinement period. The male gender was the most represented in basketball and rugby (Figure 1).

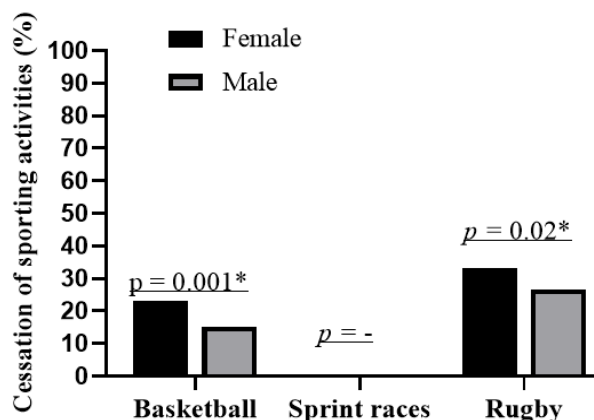


Figure1. Cessation of sporting activities during the confinement period according to the gender and the sports discipline.

* The significance threshold was set at $p < 0.05$.

3.5 Respect for barrier measures according to the sporting discipline and gender

Women showed higher respect for barrier measures than men in the Sprint discipline. In rugby, it is rather the men who have shown more rigor in respecting these measures compared to the women (Figure 2).

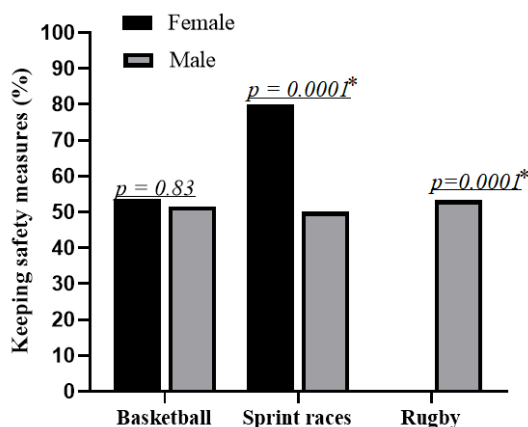


Figure2. Relationship between the training frequency and keeping safety measures against COVID-19 according to the gender and the sports discipline.

* The significance threshold was set at $p < 0.05$.

3.6 Respect for barrier measures according to the sporting discipline and the age group

Compliance with barrier measures was mainly found among older athletes (+25 years old) in disciplines such as Basketball and Sprint. In rugby, it was the youngest athletes (21 years old) who showed a higher percentage of compliance with these measures (Figure 3).

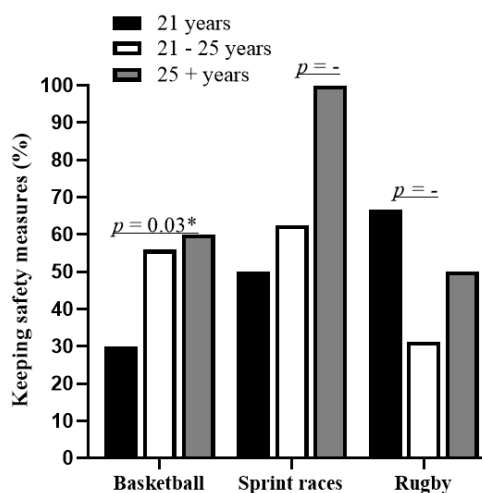


Figure3. Relationship between the ages of athletes and keeping safety measures against COVID-19 pandemic.

* The significance threshold was set at $p < 0.05$.

4. DISCUSSION

The aim of this study was to report the perceptions on the resumption of competitions and the frequency of training among 91 Senegalese amateur athletes in response to the confinement related to COVID-19 pandemic. We noted a low percentage of athletes (27.4%) who were optimistic about resuming competitions within a short time frame (one to three months). Hence, they represented 69.2% wanting to resume sports activities without interruption during the confinement period. In the study by Pillay *et al.* [11], 35% of the athletes were found to have the same impression as the athletes in our study, while 50% of the athletes intended to resume their sports when the authorities would allow it. This difference in results could be attributed first to the contexts in which the various studies were carried out and then to the skeptical cultural and religious considerations about the Coronavirus disease, which Senegalese athletes would have had during the confinement period. Those considerations on the Coronavirus disease may have had an influence on the perception of the seriousness of the health condition. The context of the study by Pillay *et al.* is that of a rich, industrialized country where competitive and leisure sports are the most developed [17]. With close attention being paid to the follow-up of athletes, it was obvious that the majority of them in that study agreed with the cessation of games, since they benefited from support at different levels during the confinement period. We found out that the most common training frequencies were daily and less than three days a week. There was therefore an equal proportion of athletes who continued to train diligently and who were irregular in their training. Facer-Childs *et al.* [18], Mon-Lopez *et al.* [19] as well as Soares *et al.* [20] reported in their work, a decrease in the number of hours, the number of days and the duration of training sessions compared to the period before the pandemic. According to these authors, being irregular in the practice of sports during the confinement period is a norm for athletes. As for the three sports chosen, training is preferably done on playgrounds provided for this purpose. The closure of these areas has certainly been a real obstacle for more than one athlete. It would be quite extraordinary to find athletics track in a sprinter's home, for example. As for team sports like basketball and rugby, training alone does not have the same value or the same result as training with teammates. On the other hand, sponsorship, the absence or presence of home training

equipment, motivation and support for athletes are some of the reasons that can justify these results, which differ from ours. In amateur sport generally, most of the funding comes from the athletes themselves. They provide almost all of their support. One could go further by hypothesizing that athletes who had other sources of income had continued to be persistent in their training schedule while those who had no funds to rely on, had to diversify their activities during the period of confinement, hence their irregularity in the practice of their sport. The reasoning supported so far could also explain the cessation of their sport by rugby players and basketball players during the confinement period.

This research work is among the first in Sub-Saharan Africa to provide information on the perceptions of amateur athletes on the return to the practice of their sport and their consistency in their training schedule during the confinement period. Our results could potentially present memory biases, since the data collection took place one year after the confinement period. Nevertheless, they provide additional information to studies on the same theme, carried out in Black Africa, particularly in countries with limited resources for sports.

The cross-sectional nature of this study does not allow definitive conclusions. We can also regret the absence of a comparative approach between amateur athletes and professional amateurs. The use of online questionnaires for data collection represents a source of information and selection bias in the sampling process.

This study informs us about the perception of amateur athletes in Dakar regarding the rapid resumption of games during the confinement period. The majority of Senegalese amateur athletes agreed to resume training during the pandemic period. Those who train daily and those who train less than three days a week were equally represented. Male athletes in team sports were more concerned by the cessation of their sports during the confinement period. The next areas of research may focus on the attitudes shown by professional athletes from the same city under the same conditions.

5. ACKNOWLEDGMENTS

The authors of this article thank all the amateur athletes who voluntarily took part in this study. Our thanks also go to Dr KOJOM Loïc Pradel who carried out the statistical analysis of the data.

6. COMPETING INTERESTS

The authors declare that they have no competing.

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Citation: Evelyne C. Mbock, et.al. "Effects of covid-19 pandemic confinement on training sessions and activities resumption among 91 amateur athletes in Dakar (Senegal)." *International Journal of Sports and Physical Education (IJSPE)*, vol 9, no. 1, 2023, pp. 01-07. doi: <http://dx.doi.org/10.20431/2454-6380.0901001>.

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