

Massification of combat fitness: A case study in the COVID-19 pandemic stage

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ABSTRACT

The study presents a social approach, which involved the Ambateño community, specifically the users, owners and administrators of gyms and personal training centres, whose objective was to incorporate an innovative sporting discipline to exercise to the rhythm of music, known as combat fitness. The research presents a descriptive analysis related to sports management and social innovation in the massification of combat fitness during the COVID-19 health emergency; the study was conducted with 150 participants from gyms in the city of Ambato, the data found show that sports management and the use of technology has strengthened the massification of combat fitness during the COVID-19 pandemic, as users were able to practice the sport from their homes, for which a technological platform (ZOOM) was used, in order to mitigate the contagion in the participants. The results show that innovative sports management has achieved the massification of combat fitness in the city of Ambato, being a great contribution to Ambato society, as it sought to promote the interest of exercising daily from home to maintain the quality of life in users due to the health crisis of the year 2020.

Keywords: Management; Innovation; Massification; Combat fitness.

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INTRODUCTION

The present study was developed in the city of Ambato, the main problem that has been perceived is the lack of knowledge of a new sporting discipline called combat fitness, which contributes to the physical well-being of people, for this reason, it is of great relevance to inform society about the contribution to the physical and mental health of users in the pandemic stage. The owners and managers of training centres (gyms) are unaware of this innovative sporting speciality for exercising to the rhythm of music (Kongan, 2005), therefore, as they are unaware of the existence of this innovative method, they do not have a physical preparation service at home, on the other hand, there are no innovative studies to achieve the massification of combat fitness, generating a society disconnected from physical-sporting activity, even leading to a sedentary lifestyle (Valle, 2019). Currently there is concern about the issue of health care due to the health emergency, to such an extent that personal care has increased significantly in all social extracts, a clear vision of quality of life towards longevity, however, the rates of obesity and non-communicable diseases in the population are increasing worldwide, for this reason, the challenge is to motivate the performance of combat fitness to create interest in physical exercise performed at home to mitigate the spread of COVID-19, since exercise reduces the risk of dyspnoea (respiratory distress syndrome), which is one of the main causes of death from COVID-19 (Manoj, 2021).

The research work considered an innovative management strategy to disseminate combat fitness, it was managed with the owners of the different training centres to massify its practice, the dissemination was carried out by various media at regional level, presentations were made through virtual demonstration classes to users of gyms and training centres; It was considered to promote an appropriate sports management, so that this new sport is disseminated for the benefit of the population of the city of Ambato, that is, a new and innovative management towards the massification of combat fitness, thus agreeing with what was stated by (Sanabria Navarro, Silveira Pérez, Guillen Pereira, & Rosero Duque, 2020) who state that an innovative vision has a significant impact on the increase of user groups, especially female users of sports gyms. The present study is of social impact, since this innovative training system combines the practice of combat fitness with a controlled calorie intake that benefits muscle toning (Acosta, 2019). Therefore, the proposed study analyses the impact of innovative sports management on the massification of combat fitness in the city of Ambato.

State of the art

Combat fitness appears as an aerobic practice, it is based on short routines that mean great effort for toning muscles quickly, it is very important to improve physical condition and personal health (Hendry, 2018); the music in each session generates great expectations towards the attention in the execution of the movements, in short, fitness presents a set of exercises and activities that strengthens the cardiorespiratory system (Ortega, 2008), at the beginning of the programme should start with low impact exercises, progressively increasing the intensity, especially in physically active people as they progressively increase their heart rate as the intensity of the activity increases (Tobar, 2020), i.e., according to personal progress, the physical condition of the subjects should be monitored at all times according to the load and the established training (Porrás Alvares & Bernal Calderón, 2019). Physical health is closely related to physical fitness, the practice of combat fitness establishes improvements in blood pressure, resting heart rate, lean mass, low-density lipoprotein cholesterol and countermovement jump performance (Milanović, et al., 2019). Regarding the massification of combat fitness (Edelaar, 2019) mentions that it should be worked from an ecological context, where the subject is integrated into their environment, i.e., the home facilitates greater attention to the full range of processes through which individuals can improve their physical fitness. On the other hand, studies have been conducted in older adults, highlighting that greater aerobic fitness is associated with a more

favourable vasoconstrictor response (O'Brien, Mekary, Robinson, Johns, & Kimmerly, 2019), thus supporting the study of the massification of fitness in the populations of young people and adults to strengthen physical condition in the city of Ambato due to the COVID-19 health emergency. Thus, in the field of Combat Fitness, a diversity of programmes is addressed, which seek to increase the training system without being exposed to COVID-19 contagion, its practice is carried out through aerobic exercises, with dynamic routines, using musical themes with adapted effects of blows. Finally, Veiga's research, (2019) presents the results of the third National Survey on Fitness Trends for the year 2019, whose objective was to identify the main trends and their relevance in the fitness sector. The opinion of 600 professionals in the fitness sector was collected on 46 potential trends with the use of an online questionnaire, meanwhile (Estrada Marcén, Sanz Gonzalo, Casterad Seral, Simón Grima, & Roso Moliner, 2019) describe in detail the ideal characteristics that fitness centres should have for the city of Zaragoza (Spain), The 19 centres participating in the study, their technical management and coordination teams, developed it through telephone contact and a questionnaire using the Google Drive tool, however (Sancho & Mestre, 2004) confirms that few cases have had management strategies for personal care. According to (García & García, 2007) they state that a service company, such as social management entities, is first and foremost a public service.

The massification of sport activities promotes the hierarchy of organizing everything related to sport; one of the most important purposes in the context of sport services is to know what the user's future intentions are, therefore this has become one of the main objectives within sport management (García, Alguacil, & Molina, 2020), however, the lack of knowledge of an adequate sport administration hinders the fulfilment of the proposed goals; In this sense, the main theoretical findings demonstrate various models applicable to the context of organizations and the ability of their managers to achieve the goals and attainment of the strategic objectives that are designed (Padierna Cardona, Cardona Mejía, Córdoba Arboleda, Giraldo Sierra, & Colorado Arango, 2019). Proper quality management in organizations implies an evolution with respect to the demands established by the market (fitness users), creating an innovative alternative to improve competitiveness and differentiate quality services in an entity (Morales Sánchez, Pérez López, & Morquecho Sánchez, 2016), providing an added value to achieve continuity of users over time, for its part (Cuevas, 2020) argues that, sport and its values are auxiliary to direct an innovative society towards democratic governance, as it is a subject that needs three components in a balanced way: 1) government intervention, regulation and promotion; 2) civil society involvement and interest; 3) monetary support from the market to achieve beneficial goals within society. Therefore, it is important to investigate the relevance of sport management to analyse the indicators of massification.

METHODS

The present study was carried out by means of a descriptive analysis, whose approach is inscribed in the propositional critical paradigm.

Subjects: The present study was carried out with 150 participants of the gyms in the city of Ambato. The direct beneficiaries were 120 users who attend the different training centres and gyms in the canton of Ambato, who have sought to exercise in the COVID-19 pandemic stage in order to improve their quality of life (physical and psychological aspects), avoiding leaving home to mitigate the contagions in their homes, as users have sought to increase the factors of personal self-esteem and their levels of physical preparation (Mocha-Bonilla Julio, 2018); while the remaining 30 participants were the managers owners of the physical training centres.

Table 1. Sample.

Description	Quantity	Percentage %
Participants / Users	120	80
Owners and administrators	30	20
Total	150	100

Instrument

The technique used for data collection was an online survey, applied by means of a structured questionnaire, in which the purpose of the research was made known, this technique allowed us to have virtual contact with the participants and owners of the training centres; the structured questionnaire was applied, the questions of which were related to the variables of the researched topic. It should be noted that due to the situation that the world and the city of Ambato are going through because of COVID-19, the application of the questionnaire was carried out online, in agreement with Cardona (2019) who states that management models are first surveyed and then implemented.

Protocols

The respective link was sent to the WhatsApp of the participants (owners and users of the training centres). A previous meeting was held with the use of the Zoom platform with the owners and administrators of the gyms, who in turn maintain virtual contact with their users, the objective was to socialise the parameters and guidelines so that they could respond freely to the required information, in such a way that all the information is recorded in the established form to be able to analyse and interpret the results obtained from each of the questions posed. The research process was carried out to determine whether in the study sample innovative sports management in the pandemic stage contributed to the massification of combat fitness.

RESULTS

As was determined during the methodological process of the study, with a sample of 120 users and 30 owners of different gyms in the city of Ambato. The methodological stage in the first instance was carried out through a validation by expert judgement, who analysed each of the questions and issued their value judgements, then the second instance was to apply a process of reliability and validity of the instrument.

The validation of the research instrument (dichotomous survey) consists of 8 questions, for which a pilot test was applied to establish the reliability, the survey was applied to a sample of 30 subjects, for which the statistical software SPSS version 22 was used through the statistical method KR20 Kuder Richardson 20, used to analyse the consistency of the instrument and obtain the reliability by means of Cronbach's Alpha, the statistical analysis results in an acceptable degree of reliability 8.53 as can be seen in Tables 2,3,4.

Reliability

Table 2. Processing summary.

		N	%
Cases	Valid cases	30	100.0
	Excluded	0	0.0
	Total	30	100.0

Table 3. Instrument reliability data.

Cronbach's Alpha	N of items
.853	8

Table 4. Reliability data for the total instrument.

	Average of the scale if the element is eliminated	Variance of the scale if the element is eliminated	Correlation element-to-total correlation corrected	Cronbach's alpha if the element
Question 1	11.13	6.740	.000	.864
Question 2	10.70	5.045	.637	.833
Question 3	10.93	5.444	.596	.836
Question 4	11.03	5.964	.458	.847
Question 5	10.77	5.013	.678	.828
Question 6	10.97	5.551	.586	.837
Question 7	10.87	5.292	.602	.835
Question 8	11.07	6.340	.263	.859

The following are the main results obtained, the most relevant questions with the proposed theme applied to users, owners and administrators of gyms in the city of Ambato.

1. *Do you know about the practice of combat fitness?*

Table 5. Do you know about the practice of combat fitness?

Options	Frequency	Percentage
Yes	22	14.67
No	128	85.33
Total	150	100%

Table 5 shows that 85.33 percent of the respondents, users of the training centres do NOT know about the practice of combat fitness, while 14.67 percent DO know about the practice of combat fitness.

2. *Do you consider that innovative sports management is the capacity to promote sports activities in times of COVID-19?*

Table 6. Innovative sports management and capacity to promote sports activities.

Options	Frequency	Percentage
Totally agree	147	98.00
Agree	0	0.00
Undecided	0	0.00
Disagree	1	0.67
Strongly Disagree	2	1.33
Total	150	100.00

In relation to the question posed, it can be seen that 98% of the respondents affirm that they totally agree with innovative sports management to promote sports activities, while 0.67% disagree and 1.33% totally disagree with the question posed. This appreciation leads us to determine that the change introduced by innovative sports management would help to promote sports activities in the city of Ambato, that is, it has applicable perceptions when someone innovates by proposing new alternatives, ideas and services favourable to society.

3. Do you consider that a sports administrator is capable of managing the organizational goals of your company?

Table 7. The sports administrator is capable of managing organizational goals.

Options	Frequency	Percentage
Totally agree	142	94.67
Agree	0	0.00
Undecided	0	0.00
Disagree	0	0.00
Strongly Disagree	8	5.33
Total	150	100.00

Of the 100 percent of the subjects surveyed, 94.67% totally agree that the sports administrator manages organizational goals for the benefit of his company, while 5.33% totally disagree with what was stated in the question. The results of the questionnaire lead us to determine that the administrator is a prepared person with a dazzling vision, capable of planning, organizing, directing, and controlling the progress of his company, leading it to the desired success.

4. Do you think that innovative sports management is related to the massification of combat fitness?

Table 8. Innovative sports management and sports massification.

Options	Frequency	Percentage
Totally agree	141	94.00
Agree	0	0.00
Undecided	0	0.00
Disagree	7	4.67
Strongly Disagree	2	1.33
Total	150	100.00

Table 8 shows that 94% of those surveyed affirm that they totally agree with sports management and the massification of combat fitness; on the other hand, 4.67% disagree and 1.33% totally disagree. According to the results obtained, it can be established that sports innovation is a change, which is in constant transformation in order to improve and promote physical activity in the community; at the same time, the massification of combat fitness is contributing to the care and welfare of the population and society.

5. Do you consider that the practice of combat fitness from your home in times of pandemic has contributed to your personal care?

Table 9. Combat fitness and development of aerobic endurance.

Options	Frequency	Percentage
Totally agree	144	96.00
Agree	6	4.00
Undecided	0	0.00
Disagree	0	0.00
Strongly Disagree	0	0.00
Total	150	100.00

Regarding the practice of combat fitness in times of pandemic, carried out at home has contributed to personal care; it was verified that 96% totally agree, and 4% agree. The data obtained corroborate that combat fitness has contributed to the personal care of the study subjects during the COVID-19 pandemic.

With which the personal and family integrity has been safeguarded, the practices were organized through a virtual platform in established schedules, to be able to share the sport practice of combat fitness in each of the homes, thus contributing to mitigate the contagions in the study population.

6. Do you consider that combat fitness is a practice that allows you to strengthen your physical condition?

Table 10. Combat fitness and muscle strengthening.

Options	Frequency	Percentage
Totally agree	145	96.67
Agree	1	0.67
Undecided	2	1.33
Disagree	2	1.33
Strongly Disagree	0	0.00
Total	150	100.00

In table 10 in relation to the question of combat fitness to strengthen physical condition, it can be analysed that of the total of respondents 96.67% totally agree, while 0.67% agree, however, 1.33% are undecided, and 1.33% disagree in relation to the query raised. Therefore, it can be affirmed that the term fitness means appropriate, apt, related to physical activity in search of body strengthening, it is a discipline that uses the upper and lower extremities for training, in short, combat fitness is a practice that helps to boost cardiorespiratory functions in the pandemic stage.

7. Do you agree that innovative management has managed to massify combat fitness?

Table 11. Innovative management has achieved the massification of combat fitness in the city of Ambato.

Options	Frequency	Percentage
Totally agree	149	99.33
Agree	1	0.67
Undecided	0	0.00
Disagree	0	0.00
Strongly Disagree	0	0.00
Total	150	100.00

Table 11 shows that 99.33% of the respondents totally agree and 0.67% agree that the innovative management has achieved the massification of combat fitness in the city of Ambato.

8. Do you consider that combat fitness practiced at home has contributed to health care in the COVID-19 pandemic stage?

Table 12. Combat fitness has contributed to health care in the pandemic stage.

Options	Frequency	Percentage
Totally agree	150	100.00
Agree	0	0.00
Undecided	0	0.00
Disagree	0	0.00
Strongly Disagree	0	0.00
Total	150	100.00

In table 12 related to combat fitness and health care, it can be observed that 100% of the respondents affirm that the practice carried out from home has contributed positively to health care in the pandemic stage of the

year 2020 in the city of Ambato-Ecuador; which is positive for the functional strengthening of the individual and personal health care to avoid massive contagions.

CONCLUSIONS

The research aimed to contribute to physical and mental health through the practice of combat fitness at home, seeking a healthy lifestyle for Ambato society, since it is a modern sporting discipline that helps to improve cardiovascular resistance, coordination, agility and muscle toning in the participants; Most importantly, the practices were developed at home to contribute to self-care and mitigate the effects of COVID-19 infection.

An appropriate analysis of innovative sports management served as a contribution to promoting the practice of combat fitness in the city of Ambato. As this is a preliminary investigation, it opens the door to future lines of research, expanding the study sample in the future, since due to the circumstances of the COVID-19 health emergency, it was not possible to cover a larger number of study subjects, as it is necessary to have direct contact with all the administrators and owners of the training centres so that they are aware of the benefits of this modern discipline. We agree in this way with (Sampaio; Pimenta; Machado & Teques, 2020), who state that the Fitness Instructor Perception of Behaviour Scale (EPCI-Fit) can be applied to analyses the quality of fitness instructors.

Finally, it can be concluded that innovative sports management is important during the processes of combat fitness massification in the city gyms, thus the most suitable method to achieve the goals proposed by the managers and owners of the training centres can be supported. In other words, the massification of combat fitness wants to contribute with a quality service to satisfy the needs of the users in times of pandemic.

AUTHORS' CONTRIBUTIONS

All authors have contributed to the study.

DISCLOSURE STATEMENT

The authors state that there are no conflicts of interest.

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