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Programs of health promotion in primary care settings and its relation to hospitalization



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Background: Healthy lifestyle has been shown to prevent numerous chronic conditions and decrease mortality. However regular participation in healthier behaviour is a big challenge in public health around the world. Public Centres of Primary Health Care in Brazil offer free programs of health promotion, however little is known whether participating in those programs is related to less use of health services, especially regarding to hospitalization.

Methods: A retrospective study was carried out using data from hospital admission from 2015 to 2017 in Sao Carlos, SP, Brazil. The sample was participants ($60,6 \pm 13,1$) ($n = 248$) and non-participants ($60,4 \pm 13,0$) ($n = 248$) of health programs in all primary health care centres of the city ($n = 24$). The groups were matched by age, gender and chronic diseases. The participants should have at least 75% of frequency in the activities in the last three months. The characteristics of the program and the list of participants were provided by the program's coordinator. The number of hospital admission and length of stay were collected by the electronic data from the two hospitals of the city. Descriptive analysis as concerns to the programs and the volunteers were performed. Comparison of number of hospital admission and length of stay between the groups was executed using Mann Whitney test, considering p -value $< 0,05$.

Results: 64 programs of health promotion in 71% of primary health care centres was reported. The average of frequency was once a week. The programs were categorized in walking group (10.9%), stretching (9.4%), eastern gymnastics (3.1%), falls prevention (7.8%), craft and painting groups (9.4%); nutritional guidelines (12.6%), hypertension and diabetes orientation (10.9%), general health guidelines (17.2%) and guidelines for pregnant women (18.7%). Most of the participants and non-participants presented around 10.0% of chronic diseases and they were women (73.0%). There were not significant differences between participants and non-participants related to hospital admissions ($p = 0.146$) and length of stay ($p = 0.204$).

Discussion: The lack of relationship between the variables probably occurred because of the low frequency of the activities. Future studies should consider medications and examinations in the analysis as well as the diagnostic date of the chronic diseases during the matching on the recruitment.

Conclusion: Participating in programs of health promotion occurring once a week in primary care settings is not related to hospitalization.

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Overtraining in Resistance Exercise: A Systematic Review and Methodological Appraisal of the Literature



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Introduction: The balance between training stress and recovery is important for inducing adaptations to improve athletic performance, however overtraining can occur if resistance training is prescribed inappropriately. A comprehensive systematic review was required to collate overtraining literature and improve understanding of the mechanisms underlying functional overreaching (FOR), non-functional overreaching (NFOR) and the Overtraining Syndrome (OTS). The objective of this systematic review was to establish markers of overtraining and elucidate the mechanisms underlying maladaptive resistance training conditions. Furthermore, this review aims to appraise the methodological approaches of overtraining literature.

Methods: This systematic review was conducted according to PRISMA guidelines and registered on the Open Science Framework. A systematic literature search was performed on PubMed, Web of Science and SPORTDiscus to identify studies up to 1 December 2018. Electronic databases were searched using terms related to resistance training and overtraining. Records were included if they attempted to induce a state of overreaching or overtraining through resistance exercise in healthy participants.

Results: A total of 22 studies were selected for review. Among these studies, 7 resulted in decrements in performance and measured the time course changes in performance during a follow-up period. There were 6 studies that reported decrease in performance yet failed to implement follow-up measures. A total of 9 studies reported no adverse effects on performance. Overall, a lack of standardisation of methodology and diagnostic criteria prevents appropriate determination of FOR, NFOR and OTS in resistance training.

Discussion: Failure to demonstrate decreases in performance and inadequate performance testing during a follow-up period, prohibit the diagnosis of FOR, NFOR or OTS in majority of studies. Overtraining may be related to frequent high intensity and monotonous resistance training. However, no marker has been established as a reliable indicator of overtraining in resistance exercise. The mechanisms that underlie overtraining in resistance exercise remain unclear. Until a definitive diagnostic tool is developed coaches and athletes must to rely on training specific performance decrements to determine FOR, NFOR or OTS.

Conflicts of interest: Clementine Grandou, Lee Wallace, Nick Allen, Franco Impellizzeri and Aaron Coutts declare that they have no conflicts of interest relevant to the submission of this abstract.

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