

Counseling Interventions for Sedentary Behavior in Primary Care: A Systematic Review

Intervenções com Aconselhamento em Comportamento Sedentário na Atenção Primária: Uma Revisão Sistemática
Intervenciones de Asesoramiento para el Comportamiento Sedentario en Atención Primaria: Una Revisión Sistemática

RESUMO

Este trabalho objetivou revisar a literatura atual sobre aconselhamentos para redução do Comportamento Sedentário (CS), abordando as principais teorias e métodos na área. Trata-se de uma revisão sistemática que abrange estudos realizados no recorte temporal de janeiro de 2012 até outubro de 2022, destacando as contribuições mais relevantes e as tendências emergentes. Incluíram-se estudos originais de intervenção com aconselhamentos mostrando o desfecho CS, publicados nas bases de dados do Medline/PubMed, BVS, Scopus e Scielo, nos idiomas inglês e português, com a população maior de 18 anos, e conduzidos na atenção primária. Foram analisados os tipos de aconselhamentos aplicados nos estudos e avaliado se as estratégias foram capazes de reduzir o CS dos usuários. A revisão seguiu as recomendações do modelo PRISMA e foram encontrados 11514 estudos, após a exclusão dos estudos duplicados e aplicados os filtros necessários, restaram 2220 artigos. Executou-se a leitura dos títulos e resumos e foram aplicados critérios de inclusão/exclusão, considerando 47 artigos para serem analisados na íntegra por dois pesquisadores independentes, que após a triagem, selecionaram 3 estudos, que corresponderam todos os critérios de inclusão, para compor a revisão. De acordo com os resultados, verificou-se que a longo prazo, nos grupos que receberam aconselhamentos, ocorreu uma mudança significativa na redução do CS, em contraponto, um dos estudos apontou o aumento do CS em 98 min/dia no grupo que recebia exercícios em conjunto com o aconselhamento, talvez com forma de contrabalançar o tempo em que estiveram em atividade onde a mudança foi de um aumento de AFMV em 4,2 min/dia. Verificou-se também, um estudo Norueguês que mostrou não haver mudança a curto prazo. Conclui-se que mesmo existindo poucos estudos sobre o tema, intervenções conduzidas na atenção primária (AP) com aconselhamentos são efetivas na redução do CS a longo prazo, melhorando aspectos de saúde.

DESCRIPTORES: Aconselhamento, Atenção Primaria, Comportamento Sedentário

ABSTRACT

This study aimed to review the current literature on counseling to reduce sedentary behavior (SB), addressing the main theories and methods in the field. This is a systematic review covering studies conducted from January 2012 to October 2022, highlighting the most relevant contributions and emerging trends. Original intervention studies with counseling showing the outcome of SB, published in the Medline/PubMed, BVS, Scopus, and Scielo databases, in English and Portuguese, with a population over 18 years of age, and conducted in primary care, were included. The types of counseling applied in the studies were analyzed and whether the strategies were effective in reducing users' SB. The review followed the PRISMA model recommendations and found 11,514 studies. After excluding duplicates and applying the necessary filters, 2,220 articles remained. The titles and abstracts were read and inclusion/exclusion criteria were applied, resulting in 47 articles being fully analyzed by two independent researchers. After screening, three studies were selected that met all the inclusion criteria for the review. The results showed that, over the long term, the groups that received counseling experienced a significant change in SB reduction. In contrast, one of the studies showed a 98-minute/day increase in SB in the group that received exercise combined with counseling, perhaps as a way to offset the time spent in activity, where the change resulted in a 4.2-minute/day increase in MVPA. A Norwegian study was also found what showed no short-term change. It is concluded that, although there are few studies on the subject, interventions conducted in primary care (PC) with counseling are effective in reducing CS in the long term, improving health aspects.

DESCRIPTORS: Counseling, Primary Care, Sedentary Behavior

RESUMEN

Este estudio tuvo como objetivo revisar la literatura actual sobre consejería para reducir el sedentarismo (SE), abordando las principales teorías y métodos en el campo. Se trata de una revisión sistemática que abarca estudios realizados entre enero de 2012 y octubre de 2022, destacando las contribuciones más relevantes y las tendencias emergentes. Se incluyeron estudios originales de intervención con consejería que muestran los resultados del SE, publicados en las bases de datos Medline/PubMed, BVS, Scopus y Scielo, en inglés y portugués, con una población mayor de 18 años y realizados en atención primaria. Se analizaron los tipos de asesoramiento aplicados en los estudios y su eficacia para reducir el SB de los usuarios. La revisión siguió las recomendaciones del modelo PRISMA y encontró 11.514 estudios. Tras excluir los duplicados y aplicar los filtros necesarios, quedaron 2.220 artículos. Se leyeron los títulos y resúmenes y se aplicaron los criterios de inclusión/exclusión, lo que resultó en un análisis completo de 47 artículos por parte de dos investigadores independientes. Tras la selección, se seleccionaron tres estudios que cumplían todos los criterios de inclusión para la revisión. Los resultados mostraron que, a largo plazo, los grupos que recibieron asesoramiento experimentaron un cambio significativo en la reducción del SB. Por el contrario, uno de los estudios mostró un aumento de 98 minutos/día en el SB en el grupo que recibió ejercicio combinado con asesoramiento, quizás como una forma de compensar el tiempo dedicado a la actividad, donde el cambio resultó en un aumento de 4,2 minutos/día en la AFMV. También se encontró un estudio noruego. qué No se observaron cambios a corto plazo. Se concluye que, aunque existen pocos estudios al respecto, las intervenciones realizadas en atención primaria (AP) con asesoramiento son eficaces para reducir la SC a largo plazo y mejorar la salud .

DESCRIPTORES: Asesoramiento, Atención Primaria, Conducta Sedentaria

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INTRODUCTION

Sedentary behavior (SB) has become a growing concern globally, associated with various health problems, such as chronic noncommunicable diseases, obesity, cardiovascular diseases, and metabolic disorders¹. With increased urbanization and technology, people have been spending more and more time in sedentary activities, which requires the implementation of effective strategies for their reduction². Counseling to reduce SB is a promising approach

for primary health care professionals, integrating knowledge from psychology, physical education, and public health³. SB is a global health problem, and primary care, as the gateway to the health system, plays a crucial role in promoting healthy lifestyles. Counseling to reduce sedentary behavior can be a low-cost, high-impact intervention⁴. This systematic review aims to compile and analyze the existing literature within a specific time frame on counseling interventions aimed at reducing the time spent on sedentary activities in primary care,

identifying methods, effectiveness, and gaps in research over a 10-year period. Understanding these interventions can provide valuable guidelines for health professionals, contributing to the promotion of more active and healthy lifestyles.

METHODS

This study was registered in the International Prospective Register of Systematic Reviews with protocol number CRD42022381307, and the review was conducted in accordance

Literature Review

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with the PRISMA statement and guidelines.

The search focused on original intervention studies with counseling as an outcome, published in the Medline/PubMed, BVS, Scopus, and Scielo databases, between January 2012 and October 2022, in English and Portuguese, with a population of adults over 18 years of age, focusing on primary care. It was also necessary for the title and/or abstract to include the variable counseling intervention for CS reduction in studies involving primary health care.

Descriptors registered in PubMed's

MeSh terms ("Medical Subject Headings") and DeCs (Health Science Descriptors) were used. The words selected for the search were intervention AND counseling AND primary health care AND sedentary behavior OR sedentary time OR screen time OR sitting time in English and their respective Portuguese) intervention, counseling, primary health care, sedentary behavior, sedentary time, screen time, sitting time. Qualitative studies, literature reviews, meta-analyses, cross-sectional studies, dissertations, theses, and studies unrelated to the topic were excluded.

The data synthesis strategy consisted of analyzing the titles of the manuscripts, followed by reading the abstracts. Duplicate articles (in more than one electronic database) were removed. After screening, all articles that met the inclusion criteria remained.

For subgroup analyses, the types of counseling applied in sedentary behavior intervention studies were verified and evaluated, using data from the studies themselves, to determine whether the strategies were capable of reducing sedentary behavior in the population in primary health care.

Table 1 shows the systematization of the study search:

Descriptors	Database	Data	N without filters	Filters	Number of articles	Selected	Excluded in title/abstract
intervention AND counseling Primary Health Care(Title/Abstract) AND sedentary behavior(Title/Abstract) OR sedentary time(Title/Abstract) OR screen time(Title/Abstract) OR sitting time(Title/Abstract)	VHL	10/10/22	3024	From 2012 to 2022; in English and/or Portuguese; title, abstract	1707	367	12
intervention(Title/Abstract) AND counseling(Title/Abstract) AND Primary Health Care(Title/Abstract) AND sedentary behavior(Title/Abstract) OR sedentary time(Title/Abstract) OR screen time(Title/Abstract) OR sitting time(Title/Abstract)	Pub Med / MedLine	10/10/22	8327	From 2012 to 2022; in English and/or Portuguese; title, abstract	412	109	5
intervention(Title/Abstract) AND counseling(Title/Abstract) AND Primary Health Care(Title/Abstract) AND sedentary behavior(Title/Abstract) OR sedentary time(Title/Abstract) OR screen time(Title/Abstract) OR sitting time(Title/Abstract)	Scielo	10/10/22	20	From 2012 to 2022; in English and/or Portuguese; title, abstract,	11	9	2
intervention(Title/Abstract) AND counseling(Title/Abstract) AND Primary Health Care(Title/Abstract) AND sedentary behavior(Title/Abstract) OR sedentary time(Title/Abstract) OR screen time(Title/Abstract) OR sitting time(Title/Abstract)	Scopus	10/10/22	143	From 2012 to 2022; in English and/or Portuguese; title, abstract	90	13	5

After careful review, in accordance with the systematization of article inclusion, three manuscripts remained. It was observed that all studies associated CS with physical activity (PA), with some studies being disregarded for not distinguishing between CS and physical inactivity, considering

the term to be equivalent.

RESULTS

Data collection and analysis

All studies identified by the databases as potential were cross-referenced and reviewed using the

software Rayyan⁵ and all duplicate articles were removed. The selection of studies was performed by two independent reviewers, Daniel and Samuel (DGS and SVL). Reading the title and its respective abstract. After this initial analysis, the studies were read in full and any discrepancies were re-

solved after consensus among the authors. The software Rayyan⁵ was also used as a tool for organizing and reading the studies.

The initial search identified 11,514 articles, of which 417 duplicates were removed manually and electronically. A total of 2,220 were included after reading the title for relevance to the inclusion criteria, and 47 were read and analyzed in full. Three randomized controlled or comparative clinical trials fully met the criteria and were included in the systematic data

analysis.

STUDIES EXCLUDED FOR VARIOUS REASONS

Among the existing manuscripts, the following were excluded based on the criteria: systematic reviews, observational studies, qualitative studies, those not applied in primary care, those that did not analyze CS, non-randomized studies, opinion letters, inconclusive studies, and studies that used CS as physical inactivity.

STUDY CHARACTERISTICS

The characteristics of each study are summarized in Table 2. The final analysis included a total of $n = 428$ individuals. Among them were diabetics, obese individuals, people motivated to change their habits, people with chronic noncommunicable diseases, and patients with low to moderate cardiovascular risk. All studies used only health education groups and PA groups, together with health education.

Table 2. Studies classified according to inclusion and exclusion criteria

Nº	Título	ID do estudo / Local	Design	N	Age group	Individuals	Tipo de intervenção	Main results
1	Brief Counseling and Exercise Referral Scheme: A Pragmatic Trial in Mexico	2016 American Journal of Preventive Medicine. Published by Elsevier Inc. All rights reserved. Am J Prev Med 2016 Cuernavaca, Morelos, México. http://dx.doi.org/10.1016/j.amepre.2016.10.021	Cluster randomized pragmatic trial = CRT	132 = 117 Brief counseling and PA 115 Exercise referral	30 to 70 years	Mild hypertension for more than 5 years Cardiovascular risk	Brief counseling and PA Referral for exercise 1 hour, 3 times a week 16 weeks	Patients in the exercise group increased CS, possibly as an attempt to compensate for the time spent in activity.
2	Effectiveness of exercise and health education interventions in Brazilian primary health care	Motriz, Rio Claro, v.26, Issue 3, 2020, e10200004 DOI: http://dx.doi.org/10.1590/S1980-6574202000030004	Quasi-experimental study	86 = 55 participants 31 completed 19 combined 12 counseling	Over 30 years	PHC patients	Combined = 40 min exercise + 20 min counseling twice a week 40 minutes counseling once a week, active methodology 18 weeks	Significant reduction of CS in the group that received counseling only.
3	The Norwegian Healthy Life Centre Study: A pragmatic RCT of physical activity in primary care	Scandinavian Journal of Public Health, 2019; 47: 18–27 DOI: 0.1177/1403494818785260 journals.sagepub.com/home/sjp 10/10/22	RCT	118 participants = 57 intervention 61 control (waiting list)	>18 years	Patients able to participate in group PA	2x week exercises and motivational interview with questionnaire before and 12 weeks after 6 months	No significant change was found between the groups.

Randomized Clinical Trial (RCT); Primary Health Care (PHC)

The studies dealt with allocations into two groups, one group receiving only counseling for the population served in PC as a means of health education, and another group receiving PA combined with counseling. All interventions occurred in the medium and long term, with a minimum duration of 16 weeks, where controversial results were found. The protocols

used were not similar in any part of the systematization, sometimes because they were applied by different professionals, sometimes because they had a different application in terms of exposure time to counseling being different from the time in PA.

Adverse event

The study conducted in Mexico⁶ showed a divergence between results: the group that received PA and coun-

seling showed no significant difference between the increase in moderate to vigorous physical activity (MVPA) and the decrease in SB time. In contrast, the group that received only health education increased their MVPA time, but as a side effect, their SB time increased significantly.

Observations about the studies

It was observed that all the studies analyzed address the issue of PA

counseling in conjunction with a reduction in SB time. This view may be erroneous, as sedentary time has been identified as a risk factor for CNCDs, regardless of participation in PA, as indicated by the study that refers to prolonged time related to negative health outcomes, regardless of physical exercise⁷.

Methodological rigor

The initial identification of 2,220 articles demonstrates the scope of the search, indicating an effort to capture all relevant literature on the topic. The rigorous application of exclusion criteria, which resulted in only three eligible articles, reflects a meticulous selection process, ensuring that only studies directly related to the topic were included. This shows a gap in the literature, as the fact that only three articles were selected over a 10-year period highlights the need for further research in this specific area.

DISCUSSION

By gathering and critically analyzing existing studies on the topic, this systematic review contributes to evidence-based practice in primary health care. This is particularly important in a field where interventions can have a significant impact on public health⁸⁻⁹.

The outcomes of research related to counseling on reducing time spent in CS seem to be masked by counseling on the practice of LMPA¹⁰⁻¹¹⁻¹².

We observed that, since the beginning of the study selection process, counseling on reducing CS has been placed in the background, as if PA created an angular habit, leading to a decrease in CS. This result is not justified according to the conclusion of the study conducted in Mexico⁶. In this study, only the group that received counseling seems to have experienced a rebound effect, where the level of PA increased and, in contrast,

sedentary time increased as a way of compensating for the time spent being active.

At the same time, in the study conducted in Brazil¹³, using an active methodology for counseling, an improvement was obtained in both PA and CS reduction over a period of more than 18 weeks, a study that had a participation of 31 users.

The only study that found no significant difference in CS in its intervention was conducted in Norway¹⁴, perhaps because it was short-term, or perhaps because it adopted a mistaken intervention strategy, finding no change in MVPA or CS.

Study limitations

As a primary limitation, we found an almost complete lack of studies analyzing the occurrence of counseling for SC reduction as a means of disease prevention in primary care as the main outcome, with the exception of the three studies found. However, all the studies found are associated with the practice of PA. All three final studies reported SC as a secondary outcome and do not present/report an adequate methodology for analyzing this outcome, indicating an important study limitation to be considered. Recognizing the disagreement in the low sample calculation power performed between the studies and the discrepancy found in the results, we understand that new randomized clinical trials with greater magnitude should be carried out using a careful methodology for analyzing CS related to the primary health care user population.

CONCLUSION

Despite the limited number of studies included, this systematic review has the potential to synthesize the best available evidence on the subject, providing valuable insights and valuable understandings for health

professionals and public policy managers. In addition, it can serve as a catalyst for future, identifying areas that need further investigation.

CS can and should now be considered an important, but not exclusive, part of the treatment and rehabilitation of cardiovascular and cardiometabolic diseases. Given the low rate of counseling for CS reduction, we consider that it appears to be safe for treating sick or healthy populations. However, it is important to note that the counseling work in all the studies analyzed was carried out in association with healthy habits and PA controlled by trained professionals specialized in primary health care. Therefore, it is recommended that further studies be conducted using a standard methodology for counseling alone to reduce SB in order to obtain more concrete evidence on the subject.

The selection of only three articles after screening in a systematic review on counseling to reduce sedentary behavior in primary care can be justified for several reasons:

Strict eligibility criteria: The inclusion and exclusion criteria established in the review protocol were likely very specific, aiming to select only studies directly relevant to the research question.

Focus on a very specific topic: Counseling to reduce sedentary behavior in primary care is a very specific topic, which naturally limits the number of available studies.

Methodological quality: It is possible that many studies were excluded because they did not meet the methodological quality criteria established by the reviewers.

Scarcity of research in the area: The low number of articles selected may indicate a significant gap in the literature on counseling interventions to reduce sedentary behavior specifically in primary care.

Language or period restrictions: If

the review limited the search to certain languages or publication periods, this may have reduced the number of eligible studies

Although this situation may seem limiting, it actually highlights the importance of systematic reviews in identifying areas that need further

research and in synthesizing the best available evidence, even if scarce, on the topic in question

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