



Community-based interventions for chronic disease prevention. Systematic review

Intervenciones basadas en la comunidad para la prevención de enfermedades crónicas. Revisión sistemática

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ABSTRACT

Objective: analyze community-based interventions for the prevention of chronic diseases. **Method:** PRISMA systematic review. Thirty articles were processed as the final population, located in databases such as: Scopus, PubMed, Web of Science. **Results and conclusion:** Community interventions represent a fundamental public health strategy for the prevention and management of chronic and communicable diseases, by promoting healthy lifestyles and reducing risk factors. Comprehensive programs involving schools, families and communities have proven effective in preventing childhood obesity, while culturally adapted strategies and the use of technologies have optimized the control of diseases such as diabetes and hypertension. Likewise, community health workers play a strategic role in strengthening the link between communities and health systems, promoting adherence to services and active participation.

Descriptors: chronic disease; disease susceptibility; asymptomatic diseases (Source, DeCS).

RESUMEN

Objetivo: analizar intervenciones basadas en la comunidad para la prevención de enfermedades crónicas. **Método:** Revisión sistemática PRISMA. Se procesaron 30 artículos como población final, ubicados en base de datos como: Scopus, PubMed, Web of Science. **Resultados y conclusión:** Las intervenciones comunitarias representan una estrategia fundamental en salud pública para la prevención y manejo de enfermedades crónicas y transmisibles, al fomentar estilos de vida saludables y reducir factores de riesgo. Programas integrales que involucran escuelas, familias y comunidades han demostrado efectividad en la prevención de la obesidad infantil, mientras que las estrategias culturalmente adaptadas y el uso de tecnologías han optimizado el control de enfermedades como la diabetes y la hipertensión. Asimismo, los trabajadores comunitarios de salud desempeñan un rol estratégico al fortalecer el vínculo entre las comunidades y los sistemas de salud, promoviendo la adherencia a los servicios y la participación activa.

Descriptores: enfermedad crónica; susceptibilidad a enfermedades; enfermedades asintomáticas. (Fuente, DeCS).

Received: 02/11/2024. Revised: 20/11/2024. Approved: 12/21/2024. Published: 02/17/2025.

Original article



INTRODUCTION

Chronic diseases represent one of the leading causes of morbidity and mortality worldwide, disproportionately affecting the most vulnerable populations. These conditions, such as diabetes, hypertension, cardiovascular and respiratory diseases, are closely related to modifiable risk factors, such as sedentary lifestyles, poor diet and smoking (7). In this context, community-based interventions have emerged as a strategy to address these factors by promoting changes in health behavior and improving access to preventive services (28).

On the other hand, the implementation of community exercise programs, such as those described by Butler et al. (22), has shown significant benefits in improving the quality of life of patients with chronic diseases, such as chronic obstructive pulmonary disease (COPD). Likewise, the review by Cotonieto-Martínez and Rodríguez-Terán (7) presents the importance of integrating community interventions with primary care, which allows a more holistic approach focused on the needs of the population. It is important to deepen community education for disease prevention and control (9) (29).

The objective is to analyze community-based interventions for the prevention of chronic diseases.

METHOD

Systematic review PRISMA

Thirty articles were processed as final population, located in databases such as: Scopus, PubMed, Web of Science.

A search strategy based on MeSH terms and keywords, such as "community interventions", "chronic disease prevention", "community health workers", "health



promotion", "diabetes", "hypertension", "obesity", "COPD" and "physical activity" was used.

We included studies that evaluated community interventions aimed at the prevention and management of chronic diseases, such as obesity, diabetes, hypertension, cardiovascular and respiratory diseases, published between 2008 and 2024.

The studies had to be randomized clinical trials, observational studies or systematic reviews that reported quantitative or qualitative results related to changes in risk factors, adherence to treatment, improvement in quality of life or access to preventive services.

Opinion articles, narrative reviews, studies without access to the full text and those that did not address community interventions were excluded.

RESULTS

In the field of childhood obesity prevention, studies such as Strugnelli et al. (1) and Waters et al. (2) have shown that community-based programs that integrate schools and families can significantly reduce obesity rates in children and adolescents. These interventions, by incorporating a systems thinking and health promotion approach, achieve sustainable changes in eating habits and physical activity levels. On the other hand, Ferrari et al. (15) comment that physical activity patterns and sedentary lifestyles are influenced by sociodemographic factors, which indicates the importance of adapting interventions to the specific characteristics of each community.

In the management of chronic diseases such as hypertension and diabetes, culturally adapted interventions led by community health workers have shown favorable results, in this sense, Nguyen et al. (3), highlighted the effectiveness of cultural narratives to improve hypertension control, while Lin et al. (12) and Feng et



al. (14) demonstrated that health coaching and the use of technologies such as mobile applications can improve glycemic control and lifestyles in patients with diabetes. Cisneros-Zumba et al. (16) and Placencia López et al. (17) validated the importance of health education to prevent diabetes in vulnerable populations, especially in older adults and rural communities.

In the case of chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD), community-based exercise programs have been effective in improving quality of life and reducing costs associated with disease management (21, 22). While Yuan et al. (24) and Chen et al. (30) state that interventions based on traditional exercises, such as Baduanjin, or integrated programs in rural areas can significantly improve the functionality and health status of patients. Likewise, the work of Zuo et al. (20) demonstrated that innovative therapies, such as expressive art therapy, can have a positive impact on the health of COPD patients.

The role of community health workers is fundamental in these interventions, since they act as links between the health systems and the communities. Coker et al. (5) and Chang et al. (8) state how their participation improves adherence to health services and encourages the active participation of communities in their own care. In addition, Gore et al. (10) also emphasize that the integration of these workers in primary care can be fundamental for the prevention of diseases such as diabetes, especially in low-income populations.

In the context of cardiovascular diseases, He et al. (6) and Vallejo-Valdivieso et al. (25) comment on the effectiveness of community interventions for the control of risk factors, such as hypertension and obesity, in vulnerable populations. These strategies have also been useful in the prevention of post-surgical complications, as demonstrated by Berkel et al. (13) in patients undergoing colorectal surgery.



On the other hand, in the management of communicable diseases, Tao et al. (4) and Intriago-Guillén et al. (26) show that community interventions can improve knowledge and preventive behaviors against diseases such as influenza and vector-borne diseases; these strategies are especially relevant in highly vulnerable contexts, where access to health services is limited.

Regarding the promotion of physical activity, Moore et al. (27) and Pedley et al. (23) note that community programs can increase physical activity levels and reduce sedentary time, which contributes to the prevention of chronic diseases such as diabetes and obesity. Likewise, Jinnouchi et al. (18), demonstrated that brief exercise education can be effective for the management of chronic low back pain, while Cushman et al. (19) highlight the importance of integrating hybrid approaches to address diseases such as asthma.

Consequently, studies such as Dambha-Miller et al. (11) and Herrera-Valdés et al. (29), argue that the relationship between behavior change, weight loss and remission of chronic diseases such as type 2 diabetes and chronic kidney disease, which projects the need for community interventions that promote healthy lifestyles and reduce associated risk factors.

CONCLUSION

Community interventions represent a fundamental public health strategy for the prevention and management of chronic and communicable diseases by promoting healthy lifestyles and reducing risk factors. Comprehensive programs involving schools, families and communities have proven effective in preventing childhood obesity, while culturally adapted strategies and the use of technologies have optimized the control of diseases such as diabetes and hypertension. Likewise, community health workers play a strategic role in strengthening the link between communities and health systems, promoting adherence to services and active



participation. Therefore, the promotion of physical activity, health education and community exercise programs are essential pillars for improving quality of life and reducing health inequities, especially in vulnerable populations.

FINANCING

Non-monetary

CONFLICT OF INTEREST

There is no conflict of interest with persons or institutions related to research.

ACKNOWLEDGMENTS

To the State University of Milagro, Milagro, Guayas, Ecuador.

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