A Look At The Effectiveness Of Health Promotion Programs In Schools: Scoping Review

Um Olhar Sobre Efetividade de Programas de Promoção à Saúde nas Escolas: Revisão de Escopo

Una Mirada Sobre Efectividad De Los Programas De Salud En Las Escuelas: Revisión De Escopo

RESUMO:
Objetivo: Analisar o estado da arte da avaliação da efetividade de programas de promoção à saúde e prevenção de doenças nas escolas. Método: Adotou-se as recomendações do Instituto Joanna Briggs. A busca foi realizada na BVS Saúde, PubMed, Scopus, Embase e PsycInfo. No total, foram selecionados 55 artigos. Resultados: 25 programas foram considerados efetivos (45,5%), 14 parcialmente efetivos (25,5%) e 16 não efetivos (29%). Observou-se trabalhos realizados em 5 continentes, abordando temáticas em promoção da saúde e prevenção de doenças. Foram identificados 11 domínios avaliativos para mensurar a efetividade das ações estudadas. Conclusão: Sugere-se a importância de metodologias e métodos diversos para a avaliação de efetividade das ações em promoção da saúde na perspectiva da triangulação de métodos. Ademais, deve-se incluir uma análise das relações simbólicas e de poder, buscando contemplar a complexidade, principalmente, em relação ao desenvolvimento integral de crianças, adolescentes e jovens em contexto escolar.
DESCRITORES: Avaliação de Programa; Promoção da Saúde; Prevenção Primária; Prevenção Secundária; Educação Básica.

ABSTRACT:
Objective: To analyze the state of the art in evaluating the effectiveness of health promotion and disease prevention programs in schools. Method: The recommendations of the Joanna Briggs Institute were adopted. The search was carried out in BVS Saúde, PubMed, Scopus, Embase and PsycInfo. A total of 55 articles were selected. Results: 25 programs were considered effective (45.5%), 14 partially effective (25.5%) and 16 not effective (29%). There were studies carried out on 5 continents, addressing issues of health promotion and disease prevention. Eleven evaluation domains were identified to measure the effectiveness of the actions studied. Conclusion: We suggest the importance of different methodologies and methods for evaluating the effectiveness of health promotion actions from the perspective of triangulation of methods. In addition, an analysis of symbolic and power relations should be included, seeking to contemplate complexity, especially in relation to the integral development of children, adolescents and young people in a school context.
DESCRIPTORS: Program Evaluation; Health Promotion; Primary Prevention; Secondary Prevention; Basic Education.

RESUMEN:
Objetivo: Analizar el estado del arte en la evaluación de la eficacia de los programas de promoción de la salud y prevención de enfermedades en las escuelas. Método: Se adoptaron las recomendaciones del Instituto Joanna Briggs. La búsqueda se realizó en BVS Saúde, PubMed, Scopus, Embase y PsycInfo. Se seleccionaron 55 artículos. Resultados: 25 programas fueron considerados eficaces (45,5%), 14 parcialmente eficaces (25,5%) y 16 no eficaces (29%). Había estudios realizados en 5 continentes, que abordaban temas de promoción de la salud y prevención de enfermedades. Se identificaron 11 dominios de evaluación para medir la eficacia de las acciones estudiadas. Conclusión: Se sugiere la importancia de diferentes metodologías y métodos para evaluar la eficacia de las acciones de promoción de la salud desde la perspectiva de la triangulación de métodos. Además, se debe incluir un análisis de las relaciones simbólicas y de poder, buscando contemplar la complejidad, especialmente en relación al desarrollo integral de niños, adolescentes y jóvenes en el contexto escolar.
DESCRIPTORES: Evaluación de Programas; Promoción de la Salud; Prevención Primaria; Prevención Secundaria; Educación Básica.

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INTRODUCTION

The ideas that permeate the understanding of the health-disease process and human behavior interfere in the way in which the relationship between education and health is constructed and developed in the school environment. [1-2] The international dimension of the debate on school health is well-known, with agendas created in international forums or experiences from other countries often serving as models for the construction of government policies, programs or guidelines. [3] Health-promoting schools emerged in the 1990s in Europe as a way of disseminating healthy practices in school environments and as a strategy for reducing risk factors in children and adolescents. [4] Since then, the school has been an essential setting for health promotion and disease prevention initiatives. [5]

It is known that evaluations of health promotion actions raise theoretical and methodological questions regarding the adequacy of essentially biomedical approaches, common as a quality reference in the field of Public Health, with an epidemiological basis, such as experimental and quasi-experimental randomized studies. The search for results that can be generalized and linearly proven cause and effect disregards the diversity of contexts and relationships of meaning between subjects. [3]

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In particular, programs developed in schools constitute a very challenging field of research, as the nature of the school environment is considered complex due to the multiple interferences of an organic and open system. [6] In this sense, it is necessary to choose a set of multidimensional evaluation and monitoring methods.

To Rossi, [7] Health program evaluation activities should explore five domains: Domain 1: Assessment of the Need for a Program; Domain 2: Assessment of Program Design and Theory; Domain 3: Assessment of Program Process and Implementation; Domain 4: Assessment of Program Outcome and/or Impact; Domain 5: Assessment of Program Cost and Efficiency. This review prioritized studies related to domain 4, due to the approximation of results or impact to the various sub-domains or dimensions of analysis (Clinical, Physical, Social, Psychological, Behavioral, Socioeconomic, Sociodemographic Diagnosis, Adherence, among others).

Many studies have been developed around the world to improve the use of tools and methodologies for measuring the effectiveness of health programs. Important initiatives such as the effectiveness evaluation studies developed in China (Hong Kong Healthy School Awards Scheme) [5] and in Brazil (National Survey to Assess Intersectoral Management of the School Health Program 2021-2022) [8] can be a complementary example to existing evaluation models.

In a study, some indicators were identified through national information systems, which they called inputs and outcomes, to evaluate the effectiveness of actions in health-promoting schools in China. [5] These authors highlighted important aspects that consider a holistic approach and use national databases to improve school health programs in terms of learning, organization and school culture. In the Brazilian study on the effectiveness of the School Health Program (PSE - Programa Saúde na Escola), [8] a matrix of the dimensions of the effectiveness of the intersectoral management of the program was constructed.

The PSE is a national, intersectoral program, established within the scope of the Ministries of Education and Health by decree nº 6.286/2007, with the purpose of contributing to the comprehensive education of students in the public Basic Education network, through actions of prevention, promotion and health care. Currently, the PSE is developed by more than 90% of Brazilian municipalities and has 13 actions. [9]

It is known that the process of evaluating the effectiveness of a program is not linear. Furthermore, the terminology of concepts related to the evaluation of effectiveness, such as efficacy and efficiency, are often used as synonyms in scientific literature. Efficacy is defined as the capacity for beneficial change of a given intervention, under conditions considered ideal or controlled. On the other hand, effectiveness is linked to the notion of external validity. [10]

In the field of health promotion, criticism of the evaluation models in use point out limitations of the knowledge produced in these studies, based on linear models that seek to generalize the results, regardless of the analysis of the context of the implementation of the intervention and argue that it is necessary to go beyond the understanding of the link between objectives and planned actions, invested inputs and expected results, including an analysis of symbolic and power relations, and considering the meaning of the practices and their context among the participating actors. [3] Therefore, understanding ways of evaluating the effectiveness of health promotion and disease prevention programs is of utmost importance in the process of directing public policies and financial resources to improve the PSE monitoring system, since the construction of effectiveness indicators will allow us to understand the weaknesses and potential of a national coverage program.

Thus, we analyzed the state of the art in evaluating the effectiveness of health promotion and disease prevention programs aimed at children, adolescents and young people in schools. The specific objectives were: (i) to map studies focusing on evaluating the effectiveness of health promotion and prevention programs aimed at children and adolescents in schools; (ii) to identify methodological approaches used to measure effectiveness; (iii) to identify evidence from different studies on evaluating the effectiveness of health promotion and disease prevention programs; and (iv) to categorize programs that were effective.

METHODS

The recommendations of the Joanna Briggs Institute,[11] and PRISMA Extension for Scoping Reviews (PRISMA-ScR) [12] were adopted to conduct and prepare this scoping review. The methodology was structured in stages: formulation of the question and research objectives; search strategy and choice of inclusion criteria; search in electronic repositories and indexes; selection of studies by independent evaluators, through the Rayyan [13] platform; summarization of results, based on quantitative and qualitative analysis; interpretation and presentation of results and implications. The scoping review protocol was registered on the Open Science website under number cn63y (https://osf.io/aru8v/).

Research question and objectives

The acronym "SPICE" was used to formulate the research question. The delimited question was: "What are the evaluative sub-domains used to measure the effectiveness of health promotion and disease prevention programs aimed at children and adolescents in schools?"

Estratégia de busca e os critérios de inclusão

The following descriptors were identified: (Adolescent and Child and Child, Preschool and Pupils) and (Health Promoting School and School-based Program and Health Promotion and Primordial Prevention and Primary Prevention) and (Effectiveness).

The inclusion criteria were: experimental, pragmatic, or quasi-experimental clinical studies evaluating the effectiveness of health promotion and disease prevention programs in schools for children, adolescents, and young people (up to 19 years old, in early childhood education, and/or elementary education, and/or high school); the programs should have a minimum duration of 1 year; quantitative and qualitative evaluation stud-

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ies, with no language restrictions or publication date limits.

The exclusion criteria were: theses and dissertations, studies that did not fully or partially answer the guiding question of the review, such as studies that did not address the effectiveness of health education programs in schools, not conducted in schools, conducted in universities, interventions or specific actions in schools unrelated to programs, studies that did not contain an intervention group or monitoring measurement or that were not available for reading in the databases, protocol studies and studies that do not address effectiveness.

Search in electronic repository and indexers

The journals indexed in BVS Saúde, PubMed, Scopus, Embase and PsychInfo were consulted, as they present broad coverage of publications in the health area and in the interdisciplinary field. The search was carried out in three stages: a) Non-sensitive search in BVS Saúde and PubMed to recognize the descriptors in the texts, title and abstract of the retrieved articles and the terms in the index used to describe the articles; b) Sensitive search in BVS Saúde, PubMed, Scopus, Embase and PsychInfo, based on all descriptors. The authors independently screened the titles and abstracts of the retrieved articles, resulting in the exclusion of duplicates, to establish the eligibility of the articles that met the inclusion criteria. All articles that satisfied the first-level screening were retained for second-level screening; c) Search containing identified articles, as additional sources of the studies that were included in the review.

Study selection

The identified studies were entered into Mendeley, [14] where duplicates were removed and subsequently evaluated by 2 researchers, based on reading the title, abstract and articles, independently on the Rayyan Platform. [13]

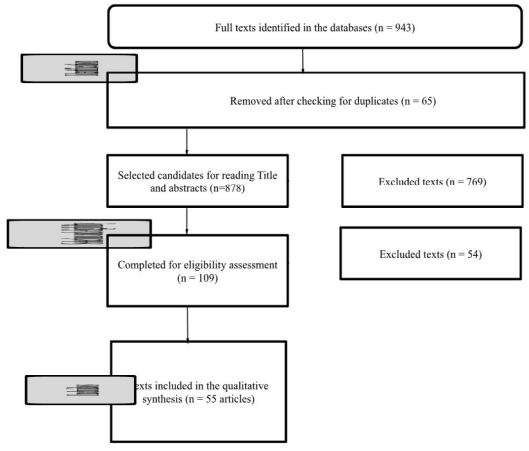
Analysis and summary of results

The results of the articles were systematized and summarized using tables and supplementary materials in Microsoft Excel 2019. Qualitative analysis was used to identify the categories a posteriori: [15] Exploration of the research question; Choice of methodological path for analysis; Data exploration; Data coding; Categorization; Validation of categories; Interpretation of findings.

RESULTS

In total, 943 articles were found. After removing duplicates (65 articles), 878 were selected for title and abstract reading. In the end, 109 studies were read in full, of which 55 were included in the analysis (Figure 1).

Figure 1: PRISMA-Scr flowchart of the article search and screening process.



Descriptive analysis of studies

The analyses showed studies developed on all continents, however, most of the studies evaluating the effectiveness of promotion and prevention actions were carried out in Europe (23 studies) and in the United States of America (13 studies). The studies were published between 1989 and 2021.

There was no program that covered the 13 PSE actions, but the consolidation of the results presented the following order of appearance of the themes: Food, Nutrition and Physical Activity (20 articles); Mental Health (14 articles); Prevention of the use of Alcohol, Tobacco and other Drugs (11 articles); Sexual and Reproductive Health/HIV (5 articles); Oral Health (4 articles); and Injury Prevention (1 article). Of the 55 articles analyzed, 25 articles were considered effective (45.5%), 14 partially effective (25.5%) and 16 ineffective (29%).

Theme 1: Food, nutrition and physical activity

Twenty studies on the topic of food, nutrition and physical activity were included, of which 8 were considered ineffective, 5 were partially effective and 7 were effective (Appendix 1). It was not possible to group by outcomes due to the different methods of approach.

In general, all interventions were within health promotion and disease prevention programs. Most programs covered and evaluated only a single intervention, characterized as focal programs, whose program name was most often related to the intervention.

Most of the interventions were carried out in a single city, with the exception of 12 studies, which evaluated program actions in a State or Province/Region.

The duration of the studies varied between 1 and 8 years. It was also observed that teachers, physical education teachers, coordinators, and health professionals (nutritionists, nurses) were involved in implementing the actions, as well as in carrying out the evaluation measures.

Some common points were observed in the studies that were effective, when compared to the studies that were not effective. For example, all of these studies carried out

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follow-up measures after the intervention ≥ 12 months. In addition, it was observed that the longer the follow-up time, the smaller the effects found.

In general, the programs considered ineffective were programs that covered more than one territory, indicating the presence of external factors that were difficult to control. In addition, there was one study that used secondary sources in an attempt to evaluate the effectiveness of the actions. However, it was not possible to establish significant differences between the effective and ineffective studies.

Theme 2: Mental health

In total, 14 articles on the topic of mental health were included. Of these, 6 articles were considered partially effective, 5 effective and 3 ineffective (Appendix 1).

Theme 3: Prevention of the use of alcohol, tobacco and other drugs

A total of 11 articles were classified under this theme, of which 4 were considered ineffective, 5 effective and 2 partially effective (Appendix 1).

The programs evaluated the effectiveness of disease promotion and prevention actions. The period of study varied between 1 and 4 years. The intervention was implemented by teachers, health professionals and/or researchers.

Theme 4: Sexual and reproductive health/HIV

In total, 5 articles were classified under this theme and all were considered effective (Appendix 1).

The domains that presented significant results were the behavioral and training/intellectual domains.

The duration of the studies varied from 1 to 3 years. It was observed that the study by Maticka-Tyndale et al applied the intervention in 40 schools in a province of Kenya. Teachers and students were involved in the application of the intervention in two studies.

Theme 5: Oral health

A total of four articles were included, one was considered partially effective, two effective and one ineffective (Appendix 1).

Dentists performed most of the interventions and assessments. Only one study resulted in non-significant findings on caries prevalence.

Theme 6: Injury prevention

Only one study was found on this topic (Appendix 1). In this study, interventions were carried out in eleven schools in the United Kingdom. The "Risk Watch" Program was considered partially effective, with significant effects on the acquisition of knowledge and skills by students. Teachers implemented the intervention and independent researchers carried out the measurements. A summary of the articles can be seen in Table 1, and Table 2 (Appendix 2) presents the programs and instruments used.

Table 1. Characterization of selected articles according to theme and methodological characteristics.

Theme[Appendix 1]	Study type	Follow-up	Effectiveness
DNPA(a)	*RCT*	*T0, T1, T2 (3, 12 months)*	*Partially Effective*
DNPA(b)	*RCT*	*T0, T1 (12 months)*	*Effective*
DNPA(c)	*CRT/RCT*	*T0, T1, T2, T3 (3, 18, 27 months)*	*Not Effective*
DNPA(d)	*CRT/RCT*	*T0, T1, T2, T3 (3, 18, 27 months)*	*Not Effective*
Theme[Appendix 1]	Study type	Follow-up	Effectiveness
DNPA(e)	*EN*	*T0, TX (3, 6, 9, 12, 15, 18 and 24 months)*	*Not Effective*
DNPA(f)	*CRT*	*T0, T1 (12 months)*	*Partially Effective*
DNPA(g)	*EN*	*T0, T1 (6,5 years)*	*Not Effective*
DNPA(h)	*EL*	*T0, T1 (5 years)*	*Partially Effective*
DNPA(i)	*CRT*	*T0, T1, T2 (12, 24 months)*	*Effective*
DNPA(j)	*RCT*	*T0, T1 (12 months)*	*Effective*
DNPA(k)	*CRT/RCT*	*T0, T1 (12 months)*	*Partially Effective*
DNPA(l)	*ECQR*	*T0, T1 (8 years)*	*Partially Effective*
DNPA(m)	*EL/ECNR*	*T0, T1, T2 (12, (24 months)*	*Effective*
DNPA(n)	*RCT*	*T0, T1, T2 (12, 24 months)*	*Effective*
DNPA(o)	*CRT*	*T0, T1 (12 months)*	*Not Effective*
DNPA(p)	*LS/CRT*	*T0, T1 (12 months)*	*Effective*
DNPA(q)	*CRT*	*T0, T1 (24 months)*	*Effective*
DNPA(r)	*CRT*	*T0, T1 (3 years)*	*Not Effective*

DNPA(s)	*CRT/RCT*	*T0, T1, T2 (12, 24 months)*	*Not Effective*
DNPA(t)	*CRT/RCT*	*T0, T1, T2, T3 (8, 10, 18 months)*	*Not Effective*
MH(a)	*RCT*	*T0, T1, T2, T3, T4 (6, 12, 18, 24 months)*	*Partially Effective*
MH(b)	*CRT/RCT*	*T0, T1 (20 months)*	*Não Efetivo*
MH(c)	*CRT/RCT*	*T0, T1, T2, T3, ... T6 (1, 2, 3, ... 6 years)*	*Partially Effective*
MH(d)	*QES*	*T0, T1, T2 (3, 12 months)*	*Effective*
MH(e)	*CRT/RCT*	*T0, T1, T2 (12, 20 months)*	*Partially Effective*
MH(f)	*RCT*	*T0, T1, T2, T3...T10 (1, 2, 3 ... 10 years)*	*Effective*
MH(g)	*RCT*	*T0, T1 (12 months)*	*Effective*
MH(h)	*QES*	*T0, T1, T2 (4, 8 years)*	*Partially Effective*
MH(i)	*CRT/RCT*	*T0, T1, T2 (3, 12 months)*	*Effective*
MH(j)	*LS*	*T0, T1, T2 (18, 42 months)*	*Partially Effective*
MH(k)	*RCT*	*T0, T1, T2 (6, 12 months)*	*Not Effective*
MH(l)	*QES*	*T0, T1 (12 months)*	*Partially Effective*
MH(m)	*RCT*	*T0, T1 (12 months)*	*Not Effective*
MH(n)	*RCT*	*T0, T1 (12 months)*	*Effective*
PATOD(a)	*RCT*	*T0, T1, T2, ...T5 (1,3, 12, 15, 24 months)*	*Partially Effective*
PATOD(b)	*QES*	*T0, T1 (12 months)*	*Not Effective*
PATOD(c)	*CRT*	*T0, T1 (21 months)*	*Partially Effective*
PATOD(d)	*CRT*	*T0, T1, T2 (1, 2 years)*	*Not Effective*
PATOD(e)	*RCT*	*T0, T1, T2, T3 (6, 18, 30 months)*	*Effective*
PATOD(f)	*QES/RCT*	*T0, T1, T2, T3 (12, 24, 36 months)*	*Effective*
PATOD(g)	*QES*	*T0, T1 (24 months)*	*Effective*
PATOD(h)	*RCT/EL*	*T0, T1 (12 months)*	*Effective*
PATOD(i)	*RCT*	*T0, T1, T2, T3, T4 (4, 12, 15, 27 months)*	*Not Effective*

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PATOD(j)	*CRT/RCT*	*T0, T1 (18 months)*	*Effective*
PATOD(k)	*CRT/RCT*	*T0, T1, T2, T3 (12, 24, 36 months)*	*Not Effective*
SRH-HIV(a)	*RCT*	*T0, T1, T2 (5, 12 months)*	*Effective*
SRH-HIV(b)	*RCT*	*T0, T1, T2 (19, 31 months)*	*Effective*
SRH-HIV(c)	*RCT*	*T0, T1, T2 (19, 31 months)*	*Effective*
SRH-HIV(d)	*QES/MQQS*	*T0, T1 (18 months)*	*Effective*
SRH-HIV(e)	*QES*	*T0, T1 (12 months)*	*Effective*
OH(a)	*LS*	*T0, T1 (6 years)*	*Partially Effective*
OH(b)	*RCT*	*T0, T1 (24 months)*	*Not Effective*
OH(c)	*RCT*	*T0, T1, T2, T3 (12, 24, 36 months)*	*Effective*
PH(d)	*RLDS*	*T0, T1, T2, T3 (6, 12, 18 months)*	*Effective*
IP(a)	*CRT/RCT*	*T0, T1 (12 months)*	*Partially Effective*

Note: DNPA = Diet, Nutrition and Physical Activity. MH = Mental Health. PATOD = Prevention of alcohol, tobacco and other drug use. SRH--HIV = Sexual and Reproductive Health/HIV. OH = Oral Health. IP = Injury Prevention. T0 = baseline. TX = follow up. RCT = Randomized controlled trial. CRT = Cluster randomized trial. QES = Quasi-experimental study. NE = Natural Experiment. LS = Longitudinal Study. NRCT = Non-randomized controlled trial. QRCT = Quasi-randomized controlled trial. MQQS = Mixed qualitative-quantitative study. RLDS = Retrospective, longitudinal and descriptive study.

Figure 2 (Appendix 3) presents the consolidation of the evaluation domains found in the 55 studies analyzed.

DISCUSSION

The main objective of this scoping review was to analyze the state of the art in evaluating the effectiveness of health promotion and disease prevention programs aimed at children, adolescents and young people in schools. After a thorough and systematic search and analysis, 55 articles were eligible for synthesis.

No study resembled the PSE, in terms of national scope. However, six themes were identified that are addressed within the PSE (Food, Nutrition and Physical Activity; Mental Health; Prevention of the use of Alcohol, Tobacco and other Drugs; Sexual and Reproductive Health/HIV; Oral Health; and Injury Prevention).

Considering the 55 articles analyzed, the most frequently found themes were Food, Nutrition and Physical Activity, Mental Health and Prevention of the use of Alcohol, Tobacco and other Drugs. The emergence of these themes may be a reflection of the increase in risk factors associated with cardiovascular diseases and mental/psychological disorders in children and adolescents observed in recent decades. [16-17] They may also be associated with the biomedical model, focused on the evaluation of clinical and physical diagnostic components, rooted in the methodological evaluations of disease promotion and prevention programs in schools. [6]

Different themes, instruments and evaluation sub-domains were used to measure the effectiveness of the actions, which made it impossible to obtain a single outcome. However, grouping these outcomes by theme made it possible to summarize the effective (45.5%), partially effective (25.5%) and ineffective (29%) articles. It was not possible to make comparisons between the effective, partially effective and ineffective studies, since the studies were only similar in terms of inclusion criteria, but not in terms of methodological approach, monitoring measure and, mainly, in terms of the objectives intended by the authors. The interventions and instruments used to measure effectiveness diverged, confirming the hypothesis that there is no single instrument considered ideal for evaluating the effectiveness of such complex actions.

One of the effective studies on Food, Nutrition and Physical Activity highlighted the importance of behavioral measures in the study of effectiveness. In addition, many of the studies found reduction in overweight, change in habits and lifestyle, and highlighted the importance of physical activities, which should be added to the interventions.

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One study,[18] also pointed out the need for interventions that include diet and physical activity for more effective results.

Effective studies on the topic of Prevention of the use of Alcohol, Tobacco and other Drugs highlighted the importance of a coordinated approach and not only through individually focused materials, but also the importance of strategies aimed at problem solving and the interference of cultural and psychosocial variables in decision making.

Marinho [19] highlighted the importance of educational measures and the correct use of brushing and fluoride in reducing cavities rates, corroborating the findings on the topic of Oral Health.

Eleven evaluative sub-domains were found to measure the effectiveness of the actions studied. These results corroborate Hettler [20], which states that evaluating the impact of health promotion and disease prevention actions requires understanding the well-being of the research subject in a holistic way, considering six dimensions: Emotional - awareness and acceptance of one's own feelings; Physical - consistent prioritization of physical self-care; Intellectual - awareness of creative and stimulating activities that lead to learning, personal growth and sharing of unique gifts; Occupational - personal satisfaction and professional enrichment; Spiritual - development of an appreciation for the depth and breadth of life and the natural forces that exist in the universe; Social - social interactions between the individual, work and environment.

Most studies were randomized and controlled in nature, 48 of the 55 studies eligible for this review were experimental or quasi-experimental. These findings are similar to the set of effectiveness studies in the field of health promotion, where disciplinary approaches from epidemiology and behavioral psychology are the most frequent. [3,5] Randomized experimental studies are often effective in measuring linear causal relationships between controlled events. However, health promotion and disease prevention programs in schools are, by definition, subject to many non-mobilizable variables. Understanding health promotion programs as social practices [3] requires considering complexity, context and reflexivity. In this sense, measuring the effectiveness of actions in randomized controlled studies may have masked the interpretations of the findings of this review, since the development of an intervention within a study of this nature may not represent faithful portraits of everyday practice achieved by pragmatic studies. [21]

The term "pragmatic trials" was introduced by Schwartz et al. [22] to test an intervention in a broad routine clinical practice. Since then, these studies have been essential for assessing external validity. It was observed that many of the studies analyzed were carried out in environments conducive to the nature of the intervention, and can be considered, with some caution, pragmatic. However, it is essential to develop tools that are capable of measuring the quality of pragmatic studies of health promotion and disease prevention developed in the school environment.

It is also worth noting that many studies have presented a risk of bias, especially when questionnaires are applied in a self-reported manner, often leading to socially desired responses. Furthermore, it is possible that the instruments used were not sensitive enough to capture relevant effects in partially and ineffective studies.

Limitations

It is also worth noting that many studies have presented a risk of bias, especially when questionnaires are applied in a self-reported manner, often leading to socially desired responses. Furthermore, it is possible that the instruments used were not sensitive enough to capture relevant effects in partially and ineffective studies. [23] Another limitation was the exploration carried out only of actions within health promotion and disease prevention programs, instead of an evaluation study of the program itself, to reach more definitive conclusions. It is known that evaluating a program requires another instrumental and methodological apparatus that considers broad domains. [7] On the other hand, the analysis brings important aspects to be considered in the evaluation of the results and/or impact of the actions of programs themselves, one of the gaps observed regarding the evaluation of health programs in the scientific community.

CONCLUSIONS

Future studies are needed to reach more definitive conclusions. It is suggested that evaluations of interventions and programs for health promotion, disease prevention and health problems in schools be carried out using diversified, non-linear evaluation methodologies and methods, which can subsequently be triangulated to provide greater coverage of evaluation domains.

In addition, it is suggested that these methods should include an analysis of symbolic and power relations, seeking to consider complexity, especially in relation to: the comprehensive development of children, adolescents and young people in a school context; teaching and learning processes; school organization; the organization of public health systems; programs focused on health and education; and the involvement of diverse sectors (intersectorality) in decision-making.

COLLABORATORS

All actors participated in the conceptualization, analysis, interpretation and writing of the final version.

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