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REVIEW ARTICLE



The Limitations and Potentials of Evaluating Economic Aspects of Community-Based Health Promotion: A Critical Review

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Abstract

Community-based health promotion (CBHP) interventions are promising approaches to address public health problems; however, their economic evaluation presents unique challenges. This review aims to explore the opportunities and limitations of evaluating economic aspects of CBHP, focusing on the assessment of intervention costs and outcomes, and the consideration of political-level changes and health equity. A systematic search of the PubMed, Web of Science and PsycInfo databases identified 24 CBHP interventions, the majority of which targeted disadvantaged communities. Only five interventions included a detailed cost/resource assessment. Outcomes at the operational level were mainly quantitative, related to sociodemographics and environment or health status, while outcomes at the political level were often qualitative, related to public policy, capacity building or networks/collaboration. The study highlights the limitations of traditional health economic evaluation methods in capturing the complexity of CBHP interventions. It proposes the use of cost-consequence analysis (CCA) as a more comprehensive approach, offering a flexible and multifaceted assessment of costs and outcomes. However, challenges remain in the measurement and valuation of outcomes, equity considerations, intersectoral costs and attribution of effects. While CCA is a promising starting point, further research and methodological advancements are needed to refine its application and improve decision making in CBHP.

1 Introduction

Community-based health promotion (CBHP) interventions are a promising way to address public health problems such as physical inactivity and health inequity [1, 2]; however, when scaling up and ensuring sustainable delivery, interventions must compete for scarce (public) resources [3]. To optimize the allocation of these finite resources, interventions are confronted with a cost-benefit logic, which plays a crucial role in (political) decisionmaking processes [4]. Therefore, health economic evaluations are often used to support policy decisions regarding

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Key Points for Decision Makers

Community-based health promotion (CBHP) interventions hold great promise for addressing complex public health problems, but they are often not prioritised because of the often unclear cost-benefit ratio.

Traditional health economic evaluation methods have limitations in capturing the complexity of CBHP interventions, as political-level outcomes (e.g., public policy, capacity building) are often qualitative and not easily quantified.

Cost-consequence analysis (CCA) is proposed as a more comprehensive approach to evaluating CBHP interventions, offering flexibility in assessing costs and outcomes. It has the potential to be an initial step to improve decision making for researchers and policy makers in this field.

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resource allocation [5]. However, the complex nature of CBHP and the logic of health economics have not yet been well aligned [6], which poses a challenge to CBHP, as they often struggle to be prioritized due to the sometimes unclear cost-benefit ratio. This article aims to be a bridging element between CBHP and economic evaluations by pointing out the possibilities and limitations of evaluating economic aspects of CBHP.

1.1 Community-Based Health Promotion (CBHP): Embracing Complexity and Addressing Wicked Problems

Over the past few decades, the community has gained importance as a central setting for health promotion [7]. The Ottawa Charter emphasizes that the community setting is a key area for action in health promotion, as it can influence the social determinants of health [8]. Nevertheless, the setting approach, especially in CBHP, goes beyond providing a location for interventions [9] and refers to the community as a complex system with complex interactions between the environment, organizations and personal factors, and a focus on bringing about and managing change within the whole community [10]. In this article, community is defined as a political-administrative as well as geographical area. Accordingly, we consider CBHP interventions to be a broad range of populationbased approaches implemented in the community. These interventions include a variety of interacting components targeting different organizational and administrative levels and sectors [11]. Community stakeholders and their contexts are simultaneously part of, and the target of, the intervention [9].

The growing relevance of CBHP has been attributed to its response to 'wicked problems' [12] in health promotion [13]; these are multifaceted, persistent challenges such as health inequities [13] and the epidemic of obesity [14–16]. As complex system characteristics, 'wicked problems' resist singular, simple solutions due to their evolving nature, multiple levels of causality and context-specific solutions [15]. In particular, short-term interventions aimed at inducing behavior changes at the individual level are often not disruptive enough to bring about long-term changes in complex systems [17, 18]. Thus, CBHP interventions have evolved, embracing complexity in the intervention, its outcomes and evaluation [9]. There has been a paradigm shift from a reductionist approach to health issues towards a holistic perspective emphasizing supportive contexts and structures [10, 19, 20]. From this perspective, complex interventions [21] can result in potentially reconfiguring the interacting elements within a complex system to achieve a set of desirable outcomes [19].

1.2 Understanding the Multilevel Outcomes of CBHP

To shed light on the potential effects of CBHP interventions, we refer to the Rütten and Gelius multilevel model of the interplay of structure and agency [22]. This model proposes that such interventions can have impacts not only on the operational level but also on the political level. Furthermore, the multilevel model describes the interplay of structure and agency in health promotion and thereby places possible fields of action at the operational and political levels [22]. The fields of action of the Ottawa Charter 'creating supportive environments' and 'developing personal skills' refer to the operational level because they directly 'affect day-today decisions made by the participants' [23]. Individual or group health education and environmental changes related to the aforementioned action fields are widely reported components of community-based interventions [1]. 'Build healthy public policy' and 'strengthen community actions' are assigned to the 'political level' because they refer to the 'pair of participation of different stakeholders in policy-making processes and the rules-resources sets in policy arenas related to these processes' [22]. CBHP interventions integrate various intervention components from different action fields targeting the operational and political levels, such as physical activity behavior, building intersectoral networks and partnerships, or changes in administrative practice [22]. While changes at the operational level, such as environmental changes or changes in health behavior, are often quickly visible, changes at the political level are much slower and more difficult to detect. However, it may be precisely these political-level changes that could be of decisive relevance for a sustainable impact on the 'wicked problems' because they 'may reinforce or change structures at the operational level' [22].

The example of the KOMBINE project illustrates the complexity of CBHP interventions and possible areas of outcome. KOMBINE aims to implement the National Recommendations for Physical Activity and Physical Activity Promotion in the community setting in Germany, with a special focus on people in difficult life situations, such as low income, low education, migration background, or chronic diseases [24, 25]. The transdisciplinary approach of socalled 'cooperative planning' brings together different actors from science, politics and practice as well as the target group to develop tailored measures for the promotion of physical activity in a moderated and interactive process. The project also aims to assess the impact of cooperative planning and the measures developed on the operational level (e.g., physical activity behavior and its determinants at the individual and population level) and at the political level (e.g., policies, organizational routines in public administration) [26].

1.3 Challenges in Conducting Economic Evaluations for Complex Public Health Interventions: The Case of CBHP

The challenging nature of conducting economic evaluations for such complex interventions in complex settings has been recognized and previously reported [6, 27–33]. The first potential pitfall that CBHP poses to economic evaluations is capturing the costs of interventions [6]. In terms of costs, for example, the large number of sectors in which costs are incurred is a challenge and potential ripple effects must also be considered [33].

However, representing a second challenge, addressing outcomes presents a more nuanced issue [6]. At this point, health economics should be differentiated, as they use a variety of techniques and evaluation methods [34]. The most widely used types of health economic evaluations are costeffectiveness analysis (CEA), cost-utility analysis (CUA), and cost-benefit analysis (CBA). CEA uses individual health effects as outcome measures [35], whereas CUA is a type of CEA that uses quality-adjusted measures such as qualityadjusted life-years (QALYs) to quantify the benefits of an intervention [36]. For both methods, the decision for the better alternative is made on the basis of individual health gains, whereas in CBHP, as mentioned above, influencing the political level beyond the individual are crucial outcomes to address the 'wicked problems' [19].

CBA tries to include all benefits of an intervention, including non-health benefits. It is designed to "enable comparability across programs that generate different types of benefits, inside or outside the health sector" [34]. The outcomes of interest must be valued in monetary terms. Nevertheless, CBA has its own set of challenges that must be considered when evaluating CBHP interventions, as nonhealth outcomes are often difficult to quantify and non-monetary outcome measures are difficult to convert into monetary terms [6]. Furthermore, the evidence suggests that the validity of revealed or stated 'willingness to pay', frequently utilized in CBAs, varies considerably [37], although this is not unique to CBHP.

Moreover, these economic evaluation methods focus on maximizing health gains rather than on their (re)distribution [33]. For CBHP interventions, a 'desirable' outcome is not necessarily to increase the total health of a population but to reduce health inequity. Therefore, it is necessary to include 'equity metrics' in economic evaluation methods [33, 38, 39], such as those utilized in the distributional CEA (DCEA) framework [40].

Nevertheless, given the complex nature of CBHP interventions, the National Institute for Health and Care Excellence (NICE) suggests cost-consequence analysis (CCA), in addition to CUA, as a health economics approach [41] that has received limited attention in this area [42]. CCA is an economic evaluation approach that aims to provide a comprehensive overview of the costs and consequences of an intervention without attempting to aggregate them into a single quantified outcome measure [28], such as in CBA, CEA or CUA.

A third challenge represents the attribution of observed effects [33]. As economic evaluations are comparative in nature and are mainly applied to medical, individual-based interventions in the healthcare system, randomized controlled trials with clear statements on causality and generalizability have been established [43]. However, when the unit of investigation does not include single individuals, whole communities and boundary conditions in complex systems are difficult to control, and randomized and controlled designs reach their limits [31].

In summary, CBHP interventions are confronted, at the latest when they are scaled up, with a cost-benefit logic, which is often fundamental for (political) decision-making processes. In health economics, this cost-benefit logic focuses on individual health gains, whereas the effects of CBHP go beyond this and can influence conditions at the political level or contribute to health equity. These characteristics are crucial for tackling complex 'wicked problems'. For this reason, on the one hand, the economic evaluation of CBHP is indispensable to provide powerful policy arguments for CBHP; on the other hand, focusing only on individual health gains seems shortsighted and insufficient due to the complexity of the 'wicked problems', leading to a significant contradiction. Given the complex nature of CBHP interventions and the challenges they pose for economic evaluation, this article aims to provide a useful bridge between CBHP and health economics. Our primary aim is to review CBHP interventions that report on either the resources they use, the outcomes they achieve, or both. Moving forward, our analysis examines the range of outcome evaluation methods presented, with an emphasis on how they integrate considerations of health equity and political-level changes. Using these insights, we discuss potential opportunities to refine and enhance future economic evaluations in the context of CBHP, ensuring they are responsive to the complex and nuanced nature of the field.

2 Materials and Methods

We followed the critical review methodology, as it "seeks to identify conceptual contributions to embody existing or derive new theory" [44]. In our case, we refer to 'theory' rather broadly in the sense of established health economic evaluations. The aim was to discover conceptual contributions to them within CBHP interventions to provide bridging elements between CBHP and economic evaluations.

2.1 Search Strategy

We applied a systematic search strategy to identify 'most significant items in the field' [44] of CBHP that had a population-based focus and referred to health equity and political-level changes. Search terms included the topics 'health promotion', 'health equity', 'community', and 'outcomes'. The final search strategy can be found in electronic supplementary information A. The search was limited to articles published in English and German, and no restrictions were made regarding the date of publication. In addition, the search was not limited to economic evaluations in order to gain a broader perspective on possible relevant and useful approaches that are not or only rarely used in established economic analyses. Using this approach, we systematically searched the PubMed, Web of Science, and PsycInfo databases for suitable publications in August 2022. We imported all results into the bibliographic management software Citavi 6.10 to organize the selection process and automatically remove duplicates.

2.2 Selection Criteria

One author (PW) first reviewed the potentially relevant studies by title and abstract for eligibility. Two authors (PW and LB) screened the full text of the remaining articles and reviewed the articles for eligibility. In case of disagreement, another coauthor was asked to review the article in question and consensus was reached between the authors. Primary research studies that reported CBHP interventions were included. Other inclusion criteria were multicomponent intervention strategies that were outside the healthcare system offered to people without diagnosed illness. The former means that at least two dimensions of the multilevel model of structure and agency [22] were addressed by the intervention. Furthermore, articles must provide information on the outcomes of the interventions. Further information on the inclusion criteria can be found in electronic supplementary information A.

2.3 Data Analysis and Synthesis

For data analysis and synthesis, we developed a data extraction form that included the year and country in which the intervention was conducted, study design and duration, theoretical approach, and specific setting of the intervention. Furthermore, we collected information on resource and cost analysis, the interventions and intervention components described, and the outcomes recorded. We assessed the identified interventions to determine whether the intervention components and outcomes described in the Results or Discussion sections are located at the 'operational level' and/or the 'political level' [22]. To obtain a more detailed overview of which specific outcomes were captured, we extracted and summarized the outcomes clearly described in the Methods section of the studies. For outcomes at the operational level, we applied the taxonomy of health outcome reporting as a classification of outcomes [45]. Given the absence of a recognized classification system for outcomes at the political level, we actively grouped outcomes based on their similarities and utilized umbrella terms derived from their original descriptions for categorization purposes. Furthermore, we conducted an analysis of the selected studies to gather information on how health equity was incorporated.

3 Results

3.1 Study Selection

The systematic search, which focused on CBHP interventions, yielded 5395 citations from all databases searched. After removing duplicates, 3825 unique citations were identified, of which 3863 were excluded by title and abstract screening. The full texts of 52 articles were screened, of which 25 were excluded because they were not community-based (n = 12) or for other reasons (see Fig. 1). Twenty-seven eligible publications were identified, reporting on 24 CBHP interventions (see Table 1). A detailed description of these interventions can be found in electronic supplementary information B.

The identified CBHP interventions date from 1992 to 2021 and have occurred primarily in Western industrialized nations. The median intervention duration was 4 years, and 60% of the interventions focused on deprived communities or subpopulations (e.g., low-income populations).

3.2 CBHP Interventions

Only five interventions conducted a detailed cost/resource assessment [47, 53, 57, 70, 71]. An additional five interventions reported on the total budget allocated for the program [46, 49, 52, 59, 62]. The issue of health equity has mainly been addressed through targeted interventions aimed at disadvantaged communities (n = 12) or populations (n = 2)as part of CBHP initiatives. Although some related data, such as educational levels and income, have been collected, no specific measures of equity have been incorporated. Twenty-three interventions described intervention components targeting the operational level, while 22 interventions also targeted the political level. Regarding operational-level outcomes, 15 interventions reported quantitatively assessed outcomes, five described qualitative outcomes, and four did not describe any operational-level outcomes. At the policy level, six interventions captured quantitative outcomes, 12 captured qualitative effects, and the remaining six captured no outcomes at this level.



Fig. 1 PRISMA flow diagram of the systematic search. PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses

While many of the interventions report operational- and political-level changes in the Results or Discussion sections, few of them describe in their methodology what effects they are trying to capture. The outcomes at the operational level reported in the Methods section assigned to the health reporting classification are shown in Table 2. Tables 3 and 4 show the qualitatively and quantitatively captured outcomes at the political level.

(n = 27)

The studies most frequently captured sociodemographic/anthropometric data (e.g., age, occupation, employment status), while personal resources and competencies (e.g., individual empowerment) were captured qualitatively by only two studies (see Table 2).

Given the absence of a recognized classification system for outcomes at the political level, we actively grouped outcomes based on their similarities and utilized umbrella terms derived from their original descriptions and based on classifications according to Nutbeam [72] for categorization purposes. Examples of each category can be found in supplementary information C. For qualitative outcomes at the political level, studies have mostly focused on networks and collaborations.

Program	Year	Country	Area of implementation	Study design	Duration	Theoretical approach	Comparison
National Better Health Program [46]	1992	Australia	Community	Case study	4 years	I	
Community-based cardiovascular disease prevention programme in Norsjö [47]	1996	Sweden	Community	Prospective, cross- sectional	5 years	1	No Intervention
Arnhemse Broek, Healthy and Well [48]	2004	Netherlands	Deprived community	Quasi-experimental pretest-post- test control group design	2 years	Social ecological approach, com- munity organization theory	No Intervention
Partnership for the Public's Health Initiative [49]	2008	USA	Community	Case study	3 years	I	I
Ho'oulu 'Aina (the Kalihi Valley Nature Park) and Kalihi Valley Instructional Bike Exchange Program (K-VIBE) [50]	2009	USA	Low-income communities	Case study	5 years	Active living by design commu- nity action model	I
KidsFirst [51]	2009	Canada	Community	Case study (mixed methods)	Ι	I	I
Steps to Health King County [52]	2011	USA	Deprived neighborhood	Case study	5 Years	Health improvement initiative: overall logic model	I
BIG – Movement as investment in health [53–56]	2011	Germany	Community	Case study	15 years	Cooperative planning, com- munity-based participatory research	I
Health Living Approach (HLA) [57]	2011	UK	Deprived communities	Multi-method case study	5 years	I	1
Public Health Act (PHA) [58]	2012	Norway	Community	Cross-sectional	4 years	'Health in All Policies'	I
Action Schools! BC [59]	2013	Canada	Community	Case study	2 years	I	I
Active Streets Active People [59]	2013	Canada	Community	Case study	2 years	1	1
Health Issues in the Community (HIIC) [60]	2015	UK	Community	Case study	2 years	HIIC logic model	1
For health, I move in my neigh- borhood! [61]	2016	France	Deprived neighborhood	Quasi-experimental pre/post	2 years	1	I
GoWell [62]	2016	UK	Deprived neighborhood	Prospective, comparative, quasi- experimental	5 years	1	Lower-higher investment
Community-based health- enhancing physical activity (CBHEPA) programs [63]	2017	Netherlands	Community	Multiple case study	3 years	Socioecological approach	I
Kaiser Permanente's Healthy Eating/Active Living Zones Initiative [64]	2018	USA	Low-income communities	Multiple case study	3 years	Socioecological approach HEAL zones logic model	1
Food & Fitness (F&F) community partnerships [65]	2018	USA	Disadvantaged communities	Multiple case study	9 years	Socioecological framework	I
'Lenzgesund' ['Lenzhealth'] [66]	2018	Germany	Deprived neighborhood	Longitudinal study with repeated pre/post measurements	6 years	Capacity building	1

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Table 1 (continued)

Program	Year	Country .	Area of implementation	Study design	Duration	Theoretical approach	Comparison
Inkster Partnership for a Health- ier Community (IPHC) [67]	2019	USA	Disadvantaged community	Case study	2 years	Socioecological framework	I
Sustainable Childhood Obesity Prevention through Community Engagement (SCOPE) Live 5-2-1-0 [68]	2019	Canada	Community	Case study	2 years	Socioecological Approach	1
Community-based participatory health (CBPH) intervention [69]	2020	South Korea	Community	Participatory mixed-methods approach	3 years	Community-based participatory research, own logic model	1
Barcelona Salut als Barris (Bar- celona Health in the Neighbor- hoods) [70]	2021	Spain	Deprived neighborhood	Case study	12 years	Public health, health promotion and community health models	1
Housing for Health [71]	2021	USA	Low-income communities	Case study	30 years	SROI logic model	I
CBHP community-based health p	romotion	1, SROI social 1	return on investment				

Quantitatively measured outcomes at the political level were mainly related to capacity building and healthy public policies.

4 Discussion

Due to the inherent complexities of CBHP interventions and their challenges in economic evaluations, this article aims to bridge the CBHP and health economics fields. Our primary focus was to review CBHP interventions that report either the resources they use, the outcomes they achieve, or both. Following this, we conducted an analysis of the variety of methods used to evaluate outcomes, with a particular focus on their integration of health equity and political-level changes. Subsequently, we discuss the potential for future economic evaluations within CBHP, based on our findings. In this review, we identified 24 CBHP interventions. While the interventions varied in scope and focus, they shared the common goal of promoting health in a community setting based on complex, multilevel interventions, reporting diverse effects at the operational and political levels. Our findings show that while there is growing interest in CBHP interventions, few studies have rigorously evaluated their effects or assessed their costs and resources. Moreover, there is a lack of clarity in the reporting of outcomes and their classifications, particularly of changes at the political level. Regarding economic evaluations, only one study conducted a CEA, focusing only on individual-related health outcomes [47].

Considering the difficulties outlined in the Introduction, it seems unsurprising that only one intervention [47] has performed a health economic evaluation, in the context of CBHP, to which the previously described challenges and shortcomings apply. This section discusses the basis of these challenges, based on the studies identified. It also explores the potential for evaluating economic aspects in future CBHP interventions.

4.1 Challenges in Identifying, Measuring and Understanding CBHP Outcomes

CBHP interventions often have a wide range of outcomes that cannot easily be captured by a single quantitative outcome measure. The results of this review demonstrate a broad spectrum of outcomes, including various qualitative and quantitative methods intended to reflect political-level changes. Nevertheless, there was a lack of a consistent taxonomy of what outcomes can even be expected, particularly for potential outcomes at the political level, representing a wide range from social capital to community empowerment and public policies. Moreover, numerous

	Health behavior	Sociodemographic/ Anthropometric Data	Health Status	Personal Ressources/ Competences	Physical and Social Environment	
Community-based cardiovascular disease prevention programme in Norsjö [47]						3
Arnhemse Broek, Healthy and Well [48]						5
Ho'oulu 'Aina (the Kalihi Valley Nature Park) and Kalihi Valley Instructional Bike Exchange Program (K-VIBE) [50]						1
BIG – Movement as investment in health [53 - 56]						1
Health Living Approach (HLA) [57]						2
For health, I move in my neighborhood! [61]						3
GoWell [62]						2
Kaiser Permanente's Healthy Eating Active Living Zones Initiative [64]						2
Inkster Partnership for a Healthier Community (IPHC) [67]						1
Partnership for the Public's Health Initiative [49]						2
	4	6	5	2	5	

Gray fields indicate that the data on this topic have been captured. Data were qualitative and quantitative. The column titles are based on the taxonomy of health reporting as a classification of outcomes [37]

CBHP community-based health promotion

studies describe political-level changes in their Discussion section, but do not cover them with clearly defined scientific methods. There also seems to be a lack of consistency in the way outcomes are described, particularly at the political level, which leads, among other things, to the fact that three studies have captured 'community capacity building', but each has a different interpretation of the term 'community capacity' [49, 66, 68]. However, the complexity of some outcomes, especially at the political level, should not discourage capturing them simply because there are no established quantitative methods for measuring them. In such cases, it might be necessary to try new sophisticated techniques, such as pre- and postnetwork density analysis and multiplier effect analysis [30, 32, 73]. In addition, the concept of triangulating qualitative and quantitative data based on outcomes at the operational and political levels seems promising [32, 74].

Nevertheless, in addition to measurement, the challenge of identifying relevant benefits and consequences remains. Here, most of the studies identified in this review refer rather loosely to a socioecological approach, which does not provide clear theoretical answers on these 'targets of change' [48, 59, 63–65, 67, 68]. As shown by some of the studies identified, the (co-) production of specific logic models for interventions could offer a promising approach to identify possible outcomes in advance [52, 60, 64, 68, 69, 71]. A stronger theory-based approach to interventions could also be helpful in this regard so that 'targets of change' can be clearly identified [21, 75].

Table 3 Qualitative, political-level outcomes of identified CBHP interventions, clearly described in the Methods section

	Healthy Public Policies	Networking & Cooperation	Organizational Procedures, Rules and Administrative Structures	Community/ Organizational Empowerment	Social Capital	
Steps to Health King County [52]						2
BIG – Movement as investment in health [53 – 56]						1
Sustainable Childhood Obesity Prevention through Community Engagement (SCOPE) [68]						1
Partnership for the Public's Health Initiative [49]						1
KidsFirst [51]						1
Health Living Approach (HLA) [57]						1
	1	3	1	1	1	

Gray fields indicate that data on this topic have been captured *CBHP* community-based health promotion

	Capacity Building	Healthy Public Policies	Funding and Resource Allocation	Communiy Empowerment	Social Capital (Community Collective Efficacy)	
'Lenzgesund' ['Lenzhealth'] [66]			-			1
Inkster Partnership for a Healthier Community (IPHC) [67]						1
Sustainable Childhood Obesity Prevention through 8Community Engagement (SCOPE) Live 5-2-1-0 [60]			4			1
9Partnership for the Public's Health Initiative [49]						2
Public Health Act (PHA) [58]						2
Community-based participatory health (CBPH) intervention [69]						2
	3	3	1	1	1	

Table 4 Quantitative political-level outcomes of identified CBHP interventions, clearly described in the Methods section

Gray fields indicate that data on this topic have been captured

CBHP community-based health promotion

Health equity as an important outcome of CBHP has, according to our findings, been addressed mainly through targeted CBHP interventions for disadvantaged communities or populations. As our results show, some related data (e.g., education, income) were also collected, but no specific equity measures were included. Moreover, such population-level surveys are very resource intensive and risk stigma-tization [76, 77]. Given these limitations and the growing relevance of addressing health inequity [78], incorporating health equity into political-level outcomes (such as policy decisions) or analyzing the effect of health equity on key political stakeholders could be a promising alternative. Only one study in our review adopted this approach [58].

4.2 Identifying and Assessing Costs and Resources in CBHP Interventions

Of the studies identified, only five included a detailed cost assessment [47, 53, 57, 70, 71] and a further five reported the total budget for the intervention [46, 49, 52, 59, 62]. Given the complex nature of these interventions, which involve multiple components, stakeholders, and sectors, identifying and measuring all relevant costs and resources while ensuring comparability across various interventions and settings can be difficult [28]. Gelius et al. [79] proposed a promising approach for conducting detailed cost assessments within complex CBHP interventions, and some studies reviewed demonstrated the feasibility of evaluating costs [47, 53, 57, 70, 71]. Nonetheless, cost assessment is often arduous and time-consuming for researchers [79], which may explain why it is not commonly performed. In addition, the design of funding modalities for CBHP research projects may be a reason why costs are not recorded in detail. Such research projects would have to be funded with an enormous financial outlay, as CBHP interventions are already cost-intensive and the additional, detailed collection of costs seems complex and time-consuming. Moreover, as seen in our results, costs are generally based on monetary values assigned to factors such as time spent by individuals, material, and travel costs, while disregarding other crucial resources such as certain personal hard and soft skills [80, 81]. Considering this broader understanding of resources beyond just monetary costs may be essential to provide a more accurate depiction of the overall resource utilization and potential trade-offs of CBHP interventions, thereby enabling informed decision making by policymakers and other stakeholders.

4.3 Study Design and Methodological Considerations for CBHP Interventions

As mentioned in the introduction, the RCT design does not appear to be appropriate for CBHP interventions. In accordance with this, our findings corroborate the absence of randomized controlled trials, identifying only three studies that utilized a quasi-experimental design. As such, alternative study designs, such as quasi-experimental studies or case studies incorporating innovative evaluation approaches (e.g., realistic evaluation [82] and theory-based evaluation [83]), may be better suited for evaluating community-based interventions. Case studies, which were the most frequently chosen study design in our findings, offer, for example, the opportunity to gain deep insights into the specific contexts and processes that contribute to the success or failure of interventions [84]. These insights can facilitate the identification of potential barriers and enablers, thereby informing the design and implementation of future interventions. Moreover, case studies can foster a better understanding of how interventions interact with the individual, social, environmental and policy factors that are often present in community settings. However, it is precisely these advantages of the case study design that do not apply to an economic evaluation, as the intervention process is usually not the focus.

Therefore, a viable alternative could be the multiple baseline design, which can be particularly valuable in situations in which RCTs are not feasible or ethically justifiable [85]. Multiple baseline designs involve the staggered introduction of interventions across different settings or populations and subsequent monitoring of changes in relevant outcomes [86]. This approach enables researchers to discern the effects of interventions while accounting for potential confounding factors and contextual variations [87]. Additionally, multiple baseline designs can accommodate the complex and multifaceted nature of CBHP interventions, thereby providing a more nuanced understanding of their outcomes.

Associated with a (quasi)-experimental paradigm is the inquiry concerning a comparative intervention, which ought to represent the 'benchmark treatment' in the healthcare setting [34]. In the context of CBHP, the definition of a 'standard intervention' remains ambiguous [28]. Our findings indicate that 'no intervention' served as a comparative measure in two studies, whereas a single study compared varying intervention intensities. Given that the typical comparator of CBHP can predominantly be characterized as 'no intervention', this may also be an appropriate reference point for (quasi)-experimental frameworks. Importantly, comparing different intervention intensities to optimize resource allocation within the intervention seems to be a promising approach for conducting economic evaluations of resourceintensive CBHP initiatives.

4.4 Perspectives and Pathways for Future Evaluations of Economic Aspects in CBHP

The results and discussed challenges show that a (partial) economic evaluation of CBHP interventions seems possible, considering health equity and political-level changes. In particular, the use of a CCA as an initial step could be a viable way of demonstrating the economic value of CBHP interventions, both for science, policy, and practice [33].

Specifically, one advantage of utilizing a CCA for CBHP interventions pertains to the measurement of outcomes, as it enables a more comprehensive and nuanced understanding of the intervention's effects by accommodating a wide array of outcome measures, including quantitative and qualitative measures [28]. Qualitative methods, as often used to cover political-level changes (see Table 3), can aid in identifying and capturing the diverse range of outcomes associated with CBHP interventions that are not easily quantifiable [88]. These techniques can provide insights into the perspectives and experiences of various stakeholders, which are critical for evaluating the effectiveness and acceptability of CBHP interventions. In addition, established quantitative measurement tools, such as those found in our results (see Table 4), can be a valuable addition, e.g., when it comes to capacity building in communities, if they are understood in a consistent way. Additionally, it is important to investigate innovative outcome measurement methods and use a triangulation of various methods in line with the principles of CCA. CCA can further provide a detailed examination of the intervention's potential impact on disadvantaged groups, trade-offs between various outcomes, potential unintended consequences, and the distribution of benefits and consequences among different population groups [89, 90].

Despite the successful identification and measurement of relevant consequences, accurately valuing outcomes for scientific purposes and informing stakeholders remains a significant challenge. It is noteworthy that a single outcome parameter, such as that used in CEA, may be advantageous over CCA. The ability to calculate an incremental cost-effectiveness ratio (ICER) as the final output of a CEA allows for a more straightforward comparison of different interventions and is more easily communicable to decision makers [28, 91]. While the ability to calculate an ICER provides a straightforward framework for decision making, the comprehensive nature of a CCA may prove more beneficial in capturing the multifaceted impacts of CBHP interventions. By providing a non-aggregated comparison of costs, resources, and outcomes, CCA allows for a more comprehensive evaluation of interventions [28, 32]. This granular approach allows for a level of detail in the analysis that, while potentially leading to some subjectivity in interpretation, provides the flexibility to address a broader range of stakeholder interests. However, CCA alone is inadequate for comprehensive and standardized health economic analysis. In the long term, more advanced methodological approaches such as difference-in-differences techniques [92], DCEA, multicriteria decision analysis, social return on investment (SROI) analysis and impact inventories [93] should be tried out, considering equity aspects and, in particular, the

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assessment of political-level changes, so as not to fall back on existing shortcomings.

4.5 Limitations and Strengths of this Review

Following the critical review methodology [44], we did not conduct an extensive literature search for this analysis. Nevertheless, we identified a satisfactory quantity of CBHP interventions from various geographical regions. Notably, CBHP interventions often arise from political shifts, which may not always be documented in the scientific literature. Moreover, the identified interventions did not present any groundbreaking methodologies, such as innovative outcome measurement techniques, that could be widely adopted in the health promotion field. Furthermore, we only analyzed outcomes that were clearly identifiable in the Methods section. Often, outcomes were reported in the Results or Discussion sections, but these occurred rather unexpectedly and could not be clearly categorized (e.g., allocation of new resources due to political changes). Moreover, as no classification taxonomy for the outcomes at the political level was recognized, we used umbrella terms based on the description derived from their original descriptions and based on classifications according to Nutbeam [72] for categorization purposes. These umbrella terms are not a comprehensive list and may have some overlap in content, confirming the need for consistent taxonomy. Furthermore, despite the introduction providing a comprehensive overview of political-level changes, there remains an ongoing debate within the public health sector regarding these terminologies [94, 95]. The literature often utilizes these terms inconsistently, without a clear definition or shared understanding, thus increasing their complexity.

Nonetheless, this paper lays a groundwork for future endeavors in conducting economic evaluations in CBHP, in which CCA could provide a first step towards a new economic perspective that transcends the focus on individuals and their values [96]. Despite this, implementing a CCA is not a *deus ex machina* to resolve the numerous and intricate challenges of economic evaluations in CBHP. Although CCA is a well-established method in health economics, there is a scarcity of guidelines or best practices for applying this approach to CBHP interventions. Consequently, researchers may need to devise innovative methods or adapt existing methods to accommodate the unique characteristics of these interventions.

5 Conclusion

This article emphasizes the importance of CBHP interventions in addressing complex public health challenges, such as health inequity. Traditional health economic evaluation methods may not sufficiently capture the broad range of outcomes associated with these interventions, highlighting the need for more comprehensive and adaptable evaluation approaches that consider political-level changes and health equity. In alignment with the identified contradiction, our findings demonstrate that the comprehensive evaluation and assessment of costs and resources are currently limited. Additionally, outcome reporting and classification lack clarity, particularly at the political level.

To bridge the gap between CBHP and health economics, CCA could be a promising method for evaluating CBHP interventions, as it provides a more comprehensive understanding of their costs and outcomes. By allowing for a flexible approach to presenting the consequences and benefits, CCA incorporates a wide array of qualitative and quantitative outcome parameters using innovative and sophisticated methodologies. The triangulation of various data sources enables a multifaceted portrayal of consequences, which can be valuable for both researchers and policymakers.

Despite CCA's potential, challenges remain, and researchers may need to create new methods or adapt existing methods to accommodate the unique characteristics of these interventions. While CCA offers a valuable starting point for evaluating CBHP interventions, it is not a panacea for addressing the complex challenges of economic evaluations in this field. Further research and methodological developments are needed to refine the application of CCA and other evaluation approaches, ultimately enhancing decision-making processes in CBHP. Furthermore, CCA can only serve as an initial step towards more advanced methods of economic evaluation.

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