Psychosocial empowerment-based interventions for smoking reduction: concepts, measures and outcomes. A systematic review

Introduction

Empowerment refers to a process by which people, organizations, and communities gain mastery over their affairs (1); the term "conveys both a psychological sense of personal control or influence and a concern with actual social influence, political power and legal rights" (p. 121). It is also viewed as both a value orientation for working in the community, and a theoretical model for understanding the process and consequences of efforts to exert control and influence over decisions that affect one's life, organizational functioning, and the quality of community life (2). Therefore, an essential aspect of empowerment is its focus on people, groups or community feeling and on their having a sense of control over their lives and the ability to change the socio-political environment to improve equity and quality of life (3). Rappaport (4) defines three fundamental components that enable people to master their own lives: *control, critical awareness,* and *participation*. *Control* refers to the ability to influence decisions that affect one's life; *critical awareness* is one's understanding of the functioning of the structures of power and decision-making processes, and how the resources are mobilized; *participation* relates to action to achieve desired and shared results. These dimensions indicate that empowerment is more than the sum of psychological constructs, such as self-esteem, self-efficacy, competency, locus of control, with which it is sometimes identified with or overlapped. In other words, empowerment is a multi-level concept that refers to both the possibility of controlling one's own life and to democratic participation in the life of one's own community, often through the mediation of structures such as schools, neighbourhoods, churches and voluntary associations, reflecting the ecological nature of empowering processes (5).

Empowerment and health

The concept of empowerment elicits reflection and revision and, despite vagueness of terminology, it has become an integral part of health-related objectives. In health prevention and promotion programmes, empowerment is usually considered a process that enhances a sense of control (6) and

any form of participation involving individuals, groups, and communities in order to improve health outcomes.

A specific aspect of empowerment in the health domain is patient empowerment, a "process in which patients understand their role, are given the knowledge and skills by their healthcare provider to perform a task in an environment that recognizes community and cultural differences and encourages patient participation" (7). It focuses on an individual perspective and this perspective has been variously criticized. Marks and colleagues (8), for example, highlighted the risk to attribute only to the individual the responsibility for his/her own health conditions without considering the responsibility of social structures, such as health services, and social inequity. Moreover, an individual perspective on empowerment focuses on traits and risks while considering the ecological view only partially, and this may conflict with empowerment theory in general (9,10).

There is evidence for the effectiveness of empowerment interventions in improving some psychosocial factors linked to health (e.g., patient self-care strategy, coping skills, access and effective use of health services) and some health outcomes like mental health and HIV/AIDS-related behaviour (11,3), yet other data appear to contradict this. Because concepts, measures, and outcomes related to empowerment in the field of health are operationalized in different ways and because empowerment refers to diverse levels of analysis – individual, organizational, and community – several questions remain open: how is empowerment used in health promotion? Is it considered a tool or an outcome? How is the concept operationalized in the intervention, and at which level is it adopted in prevention interventions? Do empowerment-based interventions take an ecological perspective? Does the clinical perspective (i.e., patient empowerment) also involve the patient's environment? And, finally, are the transformative aspects of empowerment really put into practice or, in general, do interventions maintain the status quo of power distribution? (13). To address these issues, we will examine studies that evaluated interventions based on empowerment. We will focus on tobacco control programs, since smoking prevention and cessation is the area of

health promotion that has been most studied through different theoretical and intervention approaches. The present study will analyse: 1) how research on smoking reduction/prevention has conceptualized empowerment; 2) which measures and instruments have been used to assess behaviour outcomes and the empowerment process. We hypothesized that the use of empowerment in the health domain does not always refer to the transformative potential that characterizes it and, consequently, that the "nature of power" is marginally considered (10).

Methods

For the presentation of methods adopted for the present review, we followed the PRISMA statements (12).

Search strategy

We reviewed the literature published up to November 2018 to identify studies evaluating tobacco control programs based on empowerment strategies; we did not indicate a starting date: the starting point is that established by the databases (see Annex 1 Electronic databases and keywords and results retrieved from each database).

[INSERT HERE ANNEX 1]

No restrictions were made on study design evaluation or target population. Only papers published in English were included. Studies that did not describe an intervention were excluded.

Study selection

Title and abstract (and full sources where abstracts were not available) were screened by two reviewers to identify studies coherent with our objectives. A third reviewer resolved any disagreements. After retrieving the full texts of the studies that met the inclusion criteria, we extracted the data from each study independently and then entered them on a standardized form.

Data extraction

The full texts were read independently by two authors, to extract the target elements: *Reference Concept of empowerment*, reporting the principal core concept(s) to which the study

author/s refer/s to. *Study Design*, the *General Target* to which the intervention was aimed, and the specific target (i.e., the actual *Participants*) involved in the intervention, were analyzed for the number of participants and their characteristics. Moreover, the design of the *Intervention* was extracted as well as the measures of effectiveness and results of the impact on smoking or the impact on empowerment (*Measures*).

Data Analysis

Different concepts of empowerment used by the authors were deduplicated and described. As for smoking behaviours (*Smoking Outcome*), interventions were described and the results were reported in tables (*Impact on Smoking*).

Results

Figure 1 illustrates the study selection process. The search strategy identified 18 studies: 12 reported the effect of intervention on smoking behaviour and six merely focused on outcomes related to empowerment processes. Two tables describe the study characteristics. Table 1 lists the studies that measured the impact on smoking behaviour. Among these, six explored the effect of the intervention on both smoking and empowerment (14,15,16,17,18,19). Table 2 presents the studies that focused only on empowerment processes.

FIGURE 1, TABLE 1 and 2

Reference Concepts

The studies used different definitions for empowerment depending on the context in which it was applied: *patient empowerment* (20), *empowerment counselling* (14), *parent empowerment* (21,15), *psychological empowerment* (22), and *individual empowerment* (16,18,19). The 5 studies involving young people used the term *youth empowerment* (23,24,25,26,27), and the 4 that assessed impact on the community adopted the concept of *community empowerment* (28,29,30,17). Lin and colleagues (22) defined empowerment as an intrinsic motivation that manifests in four cognitions: meaning, competence, self-determination, and impact. Alwan and colleagues (31) used the concept

of empowerment in a generic sense without further defining it. Other concepts cited in the articles ascribable to empowerment were *perceived control*, *self-efficacy*, and *self-esteem* (see *Reference Concepts* in Tables 1 and 2). Empowerment, therefore, has been used differently referring to the level of application, the target population and/or to a specific conceptualization (figure 2).

INSERT HERE FIG. 2

Study Design

Out of the 12 studies that reported an effect on smoking, four were randomized controlled trials (RCTs) (15,20,18,19), three were pre-post design with a control group (29,14,17), and three were pre-post design without a control group (31,16,27). The one non-longitudinal research (28) used a repeated cross-sectional design with a control group, while Lin and colleagues (22) performed a survey. Two of the four RCTs evaluated second-hand smoke (SHS), one smoke free households (SFH) and one smoking cessation. Studies that focused on empowerment processes were of various design: cross-sectional (23), case studies (25,26), participatory research (24), and exploratory qualitative researches (30,21). The follow-up period for smoking cessation interventions ranged between 1 month and 6 years (from 1 to 6 months for SHS reduction) and between 7 months and 6 years for prevention interventions.

Participants and Targets

Six studies involved mainly young people (28,23,24,25,26) and five studies involved only women: low-income women (14,19); women at risk of cardiovascular disease (16); mothers (21); and pregnant women (18). Two studies involved families (31,15) and one study involved patients at high risk of cardiovascular disease (20). Four studies had the general community as their target population (29,30,17,22).

Characteristics of the Empowerment Interventions

The interventions exploring an effect on smoking outcomes varied in structure. Three were individual-based interventions (20,18,27) and five were small group-based interventions (14,31, 15,16,19). Petoskey and colleagues (28), Lupton et al. (29), and Tetra Dewi et al., (17) reported community empowerment interventions involving the local community and its leaders to produce specific initiatives.

Two smoking cessation interventions (14,16) were based on group sessions and telephone contact: one (20) sent recommendations by post or email and the other provided support via a mobile app (22). The interventions that focused on reducing SHS employed different strategies: one was group-based and involved families with children (15), one was counselling-based and targeted pregnant women (18), and two were multicomponent and involved primary school students (31,19). Five of the six studies focused on community empowerment process within specific programs, and one on individual empowerment with the aim of informing the intervention design.

Outcome Measures

Seven studies reported quantitative data and five used both qualitative and quantitative measures to estimate the impact of the intervention. Five studies focused on the process of empowerment with the use of qualitative measures and one used quantitative measures (23).

Among the six studies that evaluated both empowerment and smoking behaviour, Andrews and her team (14) explored the effect of the intervention on smoking cessation and other measures related to empowerment, such as social support, self-efficacy, and spiritual well-being. Herbert et al. (15) measured the effect of parent empowerment on the number of cigarettes smoked in the context of interventions promoting smoke-free homes (SFH) and smoke-free vehicles. Tetra Dewi and colleagues (17) explored smoking prevalence and community participation in low versus high socioeconomic status communities exposed to different levels of activity intensity; Chi and colleagues (18) assessed the effectiveness of a SHS prevention program based on an expanded

health belief model incorporating self-efficacy among pregnant women in a hospital setting. Alagiyawanna and colleagues (19) investigated the effect of interventions that promote self-efficacy with regard to rejecting SHS and smoking exposure at home. Finally, Ham and Kim (16) evaluated the impact of an intervention promoting empowerment in terms of knowledge, self-efficacy, and health-related quality of life and measured changes in smoking behaviour.

Among the studies that reported an effect only on smoking outcomes, Alwan and colleagues (31) measured SFH via interviews and ad hoc questionnaires. Lupton et al. (29) examined smoking reduction in relation to changes in clinical parameters (e.g., BMI); Petoskey and colleagues (28) studied smoking prevention with regard to attitudes toward substance use and school, academic achievement, absenteeism, and cultural involvement, and Senesael and colleagues (20) evaluated smoking cessation and clinical data.

Only two studies measured empowerment by means of specific scales (15,19). Other studies evaluated it indirectly by measuring dimensions such as self-efficacy, social support, spiritual well-being, and knowledge (see *Impact on Empowerment* in Tables 1 and 2). The number of activities generated by the coalitions and the number of participants who attended them were also used as a measure of the empowerment process in the community (23,24,17).

Smoking status was assessed via individual self-report in all studies that focused on this outcome. Differently, the four studies investigating interventions for SFH evaluated other outcomes: adoption of smoke-free rules, smoking prevalence at home, and prevalence of exposure to smoking.

Smoking Outcome and Impact on Smoking

Twelve studies evaluated the impact of the intervention on smoking behaviour. Four focused on smoking cessation targeting specific population: low-income women (14), young people (27), and patients with high risk of cardiovascular diseases (16,20). No effects were found among high-risk patients, whereas the other studies showed a reduction on in tobacco use after the intervention.

Two studies that focused on the reduction of smoking in the community (29,17) found no outcome in favour of the intervention group. The study that aimed at preventing the onset of smoking via a school program reported no pre/post differences (28). Four studies were aimed at reducing SHS at home (31,15,18,19), three of which showed a statistically significant effect of the intervention on smoking exposure.

Impact on Empowerment

Three of the 12 studies (6 in Table 1 and 6 in Table 2) that measured the impact on empowerment reported greater self-efficacy for the intervention group than the control group (14,16,18). The one study (17) that measured the number of activities reported an increase in interventions in the community. Finally, six studies (Table 2) described only quantitative and/or qualitative aspects of participation in events and/or activities and/or groups. In one study (22), the effect of the intervention on empowerment was not studied, but rather whether empowerment could predict smoking cessation.

Discussion

Empowerment is widely used in prevention strategies, albeit with different connotations that preclude a common definition. We conducted this systematic review to assess the use of the theoretical construct of empowerment in interventions for tobacco use prevention or cessation, as well as the effect of prevention interventions on both indicators of empowerment and health outcomes. In general, two types of studies can be distinguished: those that focus on the smoking outcome and those that focus on the intervention process. The former are both individual and community based interventions and empowerment is considered a tool to achieve behavioural change; the latter include interventions involving target groups and communities, and focus on the development of community empowerment, active community engagement and participation. Wallerstein (3) summarized this difference in approach many years ago stating that: “Empowerment

is recognized both as an outcome by itself, and as an intermediate step to long-term health status and disparity outcomes" (p.4). In our view, studies that aim to evaluate the improvement of empowerment *per se*, without setting change as a specific objective, are less informative than studies that explore the entire causal chain from intervention to change in health or social outcomes and that use empowerment as a mediator.

About half of the interventions based on empowerment strategies were reportedly effective in improving smoking outcomes, while the remaining found no difference between the intervention and the control group. The only exception are interventions focused on SHS in which both smoking exposure reduction and empowerment outcomes were positively associated with the interventions. Because empowerment was effective in some studies but not consistently so, it cannot be considered as an effective stand-alone approach to reducing or eliminating tobacco use.

About the conceptualization of empowerment, the adopted measures and instruments, our review allows for drawing some conclusions about the use of empowerment in smoking prevention.

First, empowerment is conceptualized in several ways (32) that are consistent with the theoretical background. Therefore, we can consider these different conceptualizations consistent with the theoretical definition of empowerment. We have also pointed out that the interventions considered here operate mainly on a single level of analysis (individual, or group, or community), ignoring the multilevel dimension that is a fundamental characteristic of empowerment (34). Moreover, empowerment is defined in a generic way, often in conflict with other concepts, such as social support and level of participation.

Second, assessment of the efficacy of behaviour modification is challenging because of the diverse definitions of what empowerment means in the specific study context. Indeed, interventions here considered refer to several studies design and outcome measures, according to the empowerment level and the target. We can consider that each intervention has an internal consistency including the theoretical model, the empowerment level, the target involved and the outcome measures (see

tables 1, 2). Analysing the interventions in the whole, it is not possible to detect a well-defined methodological framework within which its own peculiarities and heuristic value.

Third, the transformative aspects of empowerment are rarely conceptualized and incorporated in the interventions. Among the studies reviewed here, only those that considered a large context (organization, community, and society) tried to develop an ecological perspective on empowerment and health. According to Franzblau and Moore (33), empowerment works through structural and social dynamics. To consider psychological empowerment only in terms of self-efficacy is reductive because it refers only to intrapersonal processes. In addition, self-efficacy is a sub process of empowerment (9) and not empowerment *per se*. Lastly, dealing with this concept merely at the individual level narrows the intervention into a clinical perspective, regardless of the ecological frame.

At the end of this review, we agree with Keys and colleagues (10) that it is ineffective to provide a singular definition of empowerment "because of the multiple, and sometimes conflicting, circumstances in which the term is used" (p. 221). Anyway, the reference to Laverack (34) could offer a possible way to create syncretism among models, objectives, and interventions with different epistemological and conceptual frameworks. Since "health promoters may face tension through the conduct of top-down programs in which goals are usually predetermined, while simultaneously trying to incorporate practices of a bottom-up approach" (35, p. 353), Laverack's model can offer suggestions for connecting these dimensions.

Limitations

The studies reviewed here used many different concepts of empowerment and some did not explicitly mention empowerment, although it was indicated as a keyword. Therefore, some papers could have escaped selection, thus reducing the generalizability of our results. Furthermore, restriction to studies on tobacco prevention could have failed in identifying the most relevant examples of prevention based on empowerment. However, because tobacco is the single most relevant risk factor for health (36), at least in the developed countries, and the main challenge for

any innovative prevention technology, we believe that our results can offer general reflections, also in other domain of health prevention and promotion.

Conclusions

From this general observation, we wish to offer scholars and practitioners some suggestions. A key element is to clarify and refine the theoretical definitions of empowerment referred to in the context of tobacco control in order to lead to more targeted interventions and to improve their transferability. Moreover, considering the intersections between the different levels of analysis and intervention is the basis for promoting the transformative trait of empowerment. In other words, it is important to specify whether the authors refer to the intersection between different levels of empowerment or whether their attention is particularly focused on a specific level (individual, psychological, community). Otherwise, the risk is overgeneralization of the concept, resulting in loss of meaning and effectiveness. It is encouraging that in about half of all the studies considered in the present review, empowerment strategies were found to be effective in improving smoking outcomes. In general, critical awareness, social support, increased self-efficacy of smoking cessation over time and participation are among the most effective factors for empowerment in smoking reduction in both individual-based or small group-based and group-based interventions. However, because empowerment was effective in some studies but not consistently so, the paper did not consider it as an effective stand-alone approach to reducing or eliminating tobacco use. It should be clearer for researchers and practitioners if, instead of using the label “empowerment” in a generic way, specific factors related to this concept were put at the core of the search for efficacy in health promotion interventions.

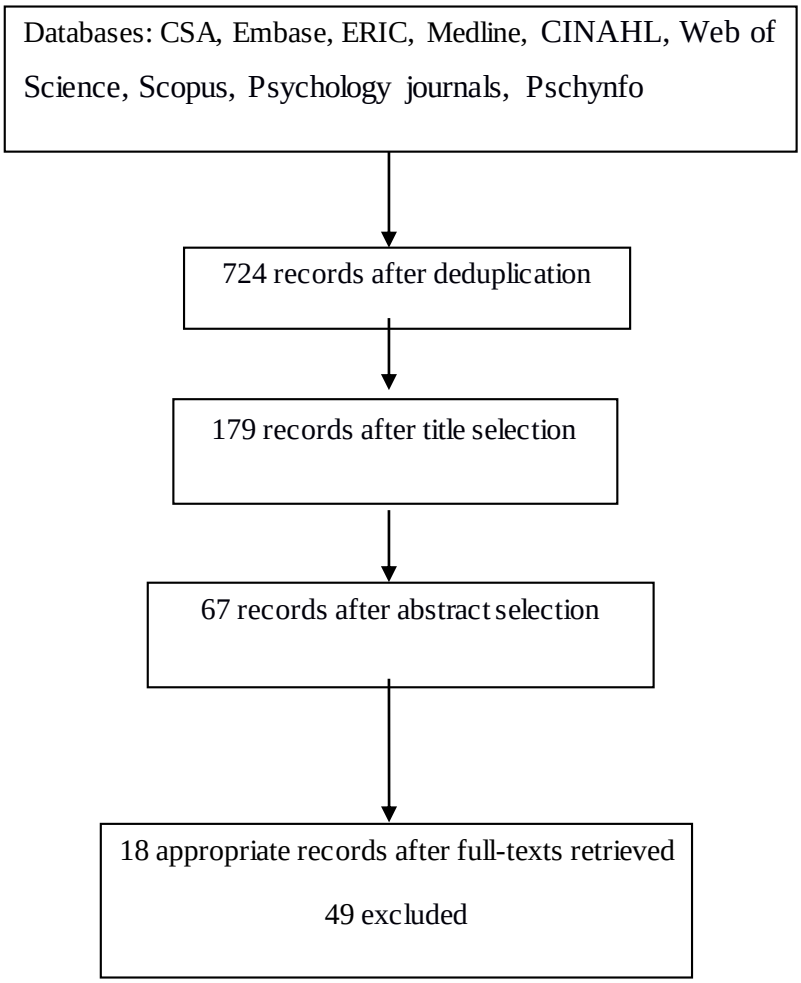

Figure 1. Study flow diagram.

Annex 1. Search strategy for each database.

MEDLINE

Empowerment.mp OR "Power (Psychology)"/ AND "Tobacco Use Disorders".mp OR "Tobacco Use Disorders"/ OR smoke.mp OR "Smoke"/ OR "Tobacco Use".mp OR "Tobacco Use"/ OR smoking.mp OR Smoking/ OR "smoking cessation".mp OR Smoking Cessation/ OR cigarettes.mp OR Tobacco Products/ OR tobacco.mp OR Tobacco/ OR "tobacco use cessation" OR "Tobacco Use Cessation"/ OR smok$.mp

285 Results

CENTRAL

empower* AND smok*

24 results

CINAHL

(MH empowerment OR TX empower*) AND (MH smoking OR smok* OR

MH tobacco OR (MH "Smoking Cessation Programs") OR (MH "Smoking Cessation")

203 results

EMBASE

('empowerment'/exp or empowerment) and (('smoking'/exp or 'adolescent smoking'/exp or 'smoking cessation'/exp or 'tobacco dependence'/exp or smok*)

243 results

PSYCHINFO

(SU.EXACT("Empowerment") or EMPOWERMENT) AND (SU.EXACT("Smoking Cessation") OR SU.EXACT("Tobacco Smoking" OR smoking cessation or tobacco or smoking or smoke))

303 results

PSYCHOLOGY JOURNALS

(SU.EXACT("Empowerment") or EMPOWERMENT) AND (SU.EXACT("Smoking Cessation") OR SU.EXACT("Tobacco Smoking" OR smoking cessation or tobacco or smoking or smoke))

136 results

SCOPUS

KEY (“empowerment”) AND KEY (“community health services” OR “Decision Making” OR “Health Promotion” OR “Consumer Participation” OR “Health Education” OR “community mobilization”) AND KEY (“Smoking” OR “Tobacco Use” OR “Smoking Cessation”) AND (EXCLUDE (SUBJAREA, “PHAR”) OR EXCLUDE (SUBJAREA, “AGRI”) OR EXCLUDE (SUBJAREA, “ARTS”) OR EXCLUDE (SUBJAREA, “BIOC”)) AND (EXCLUDE (LANGUAGE, “German”)) AND (EXCLUDE (DOCTYPE, “ed”) OR EXCLUDE (DOCTYPE, “le”) OR EXCLUDE (DOCTYPE, “no”))

52 results

ERIC

(SU.EXACT(“Empowerment”) OR SU.EXACT(“Power”) OR Empowerment) AND (SU.EXACT(“smoking”) OR smoking OR smoke OR Tobacco OR Cigarettes OR Tobacco Use)

40 results

SOCIOLOGICAL ABSTRACTS

(SU.EXACT(“Empowerment”) OR SU.EXACT(“Power”) OR Empowerment) AND (SU.EXACT(“smoking”) OR smoking OR smoke OR Tobacco OR Cigarettes OR Tobacco Use)

72 results

SOCIOLOGICAL COLLECTION

(SU.EXACT(“Empowerment”) OR SU.EXACT(“Power”) OR Empowerment) AND (SU.EXACT(“smoking”) OR smoking OR smoke OR Tobacco OR Cigarettes OR Tobacco Use)

172 results

WEB OF SCIENCE CORE COLLECTION

You searched for: TOPIC: (empower*) *AND* TOPIC: (smok*)

Languages selected: English, French, German, Spanish

261 results

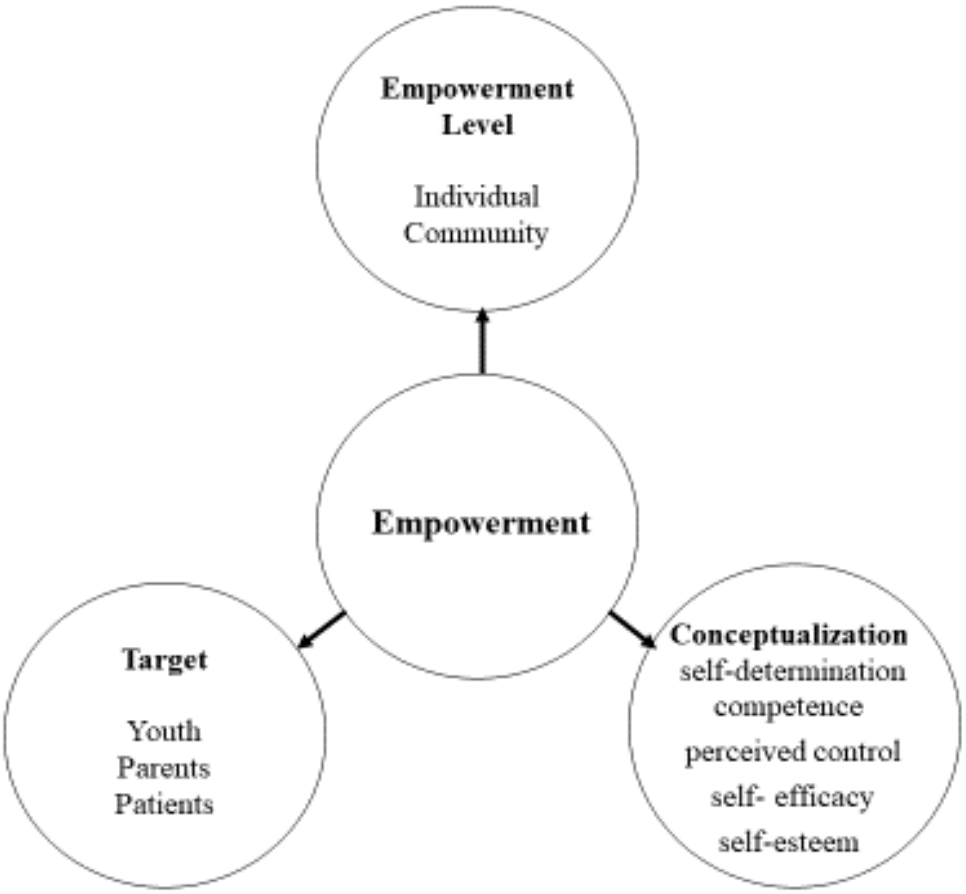

Figure 2. Reference concepts adopted in the selected articles concerning smoking prevention interventions adopting empowerment approaches.

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*References marked with an asterisk indicate studies included in the review.

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