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BRINGING THE BEHAVIOUR CHANGE WHEEL INTO SOCIAL MARKETING

ADRIANA DE FATIMA VALENTE BASTOS
ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO (FGV-EAESP)

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1. INTRODUCTION

Many people are openly concerned with improving their living standards. Health is a priority for them, and the main question is: "How can I live more healthily?". And it becomes a constant question in society. Research clearly shows that the behaviour of the individual and their lifestyle significantly affects their health (Jung et al., 2015; Shanahan et al., 2016). Increasingly, one understands that the main causes of death and sickness in the XXI century are those in which the so-called behavioural pathogens are the most important factor. Behavioural pathogens are aggregates of daily behaviours (e.g., physical inactivity, poor diet, excess ingestion of alcoholic beverages, and smoking), which can cause and affect the course of a disease (Phillips & Pitts, 2002). The reduction of the prevalence of these behaviours is a permanent challenge for public health.

Psychologists, doctors, nurses, physical educators, and health researchers have developed interventions which aim to make people adopt attitudes and behaviours that lead them to promote health and prevent diseases in their life (Phillips & Pitts, 2002). At the same time, social marketing professionals widely use their knowledge to develop programs that can influence the adoption of healthy behaviours (Quinn et al., 2009). However, the efficiency of most interventions is also a pressing matter (Kadir & Rundle-Thiele, 2018). Few interventions to change health behaviours are sustainable, especially for the long term (Brennan et al., 2014). Dropout rates are high, and many interventions do not change the long-term health-related behaviour of participants, as demonstrated by the low rates of effectiveness. For example, in a lifestyle change intervention, carried out over seven months, with 431 community-dwelling adults with developmental disabilities, aged 18–65 years, only 35% of participants completed the program (Bazzano et al., 2009). In social marketing, the use of a theory on which to base actions is a critical component of the efficiency of the actions, and this is part of one of the criteria that qualifies the potential of a behaviour change program (French & Blair-Stevens, 2006).

Theory provides a study framework, based on evidence, around which effective interventions, campaigns and tools can be designed as a driving structure. There are plenty of theories of behaviour change which often overlap, but with different names and constructs (Prestwich et al., 2014). This level of diversity and complexity, inherent to 'theory', has been quoted as a possible reason for why it is underutilized in intervention projects, and in the evaluation, replication, and implementation of improvements (Eccles et al., 2012; Michie et al., 2011).

Social marketing professionals apply familiar theories and models, most of them coming from social psychology, such as the Theory of Planned Behaviour (TPB) (Ajzen & Fishbein, 1980), due to the lack of a structured process on how to select and apply relevant theories, or, to the lack of knowledge of the contemporary theories available and applicable to a given social marketing problem (Brennan et al., 2014). In this study, our interest aligns with other social marketing researchers who call for more theoretical approaches to behavioural change, beyond the individual (Wymer, 2015), and consider the macro-social level where individuals are part of a complex system that involves behavioural performance and social change within political, social, cultural, and environmental contexts (Gordon, 2013).

Recent advances in behavioural science allow for the identification of intervention components, which can explain the variation between studies in efficacy (for instance, Michie & Prestwich, 2010; Michie et al., 2013). A recent model the 'Behaviour Change Wheel' (Michie et al., 2011) proposes that interventions may use several elements to change behaviour; for

example, the interventions can persuade the target audience by inducing positive or negative emotions, educate on the need for change, or train them in the skills necessary to achieve the desired change. These elements should be selected according to the intended shift. The BCW in general, as well as its applications within the health field (Fulton et al., 2016; Gould et al., 2017; Murtagh et al., 2018) encourages intervention designers to adopt a systematic approach to behavior change intervention projects , developed from the synthesis of nineteen existing behaviour change frameworks (Michie et al., 2011), the model guides the choice of elements (techniques of behavior change; functions of interventions and political categories) needed for the development of evidence-based health promotion interventions (Mc Sharry et al., 2016). Particularly, the BCW vision of how the target behavior can be pre-specified (Michie et al., 2015) and how to select the most appropriate behaviour change technique, from a potentially long list of options (Michie et al., 2013), suggests that the BCW is a theoretical model which can be effective in the change of behavior.

Given this focus, we address Michie's (2018) recent call to social marketers to employ the BCW and reflected on the utility of the BCW as a promising theoretical approach to guide social marketing actions. So far, there has been no research that has proposed how this guidance should work and how this model can be used in social marketing. The purpose of this article is to explore how the use of distinctive qualities of the BCW can impact research and practice in the social marketing realm. We have developed an analysis of BCW configurations from the Social Marketing Consistency Criteria (French, 2012) and ten Social Marketing Theory Development Goals (goals) (Rundle-Thiele et al., 2019) in order to identify how the distinctive qualities of the BCW model are associated with social marketing. As far as we know, this is the first effort to evaluate the BCW in light of social marketing characteristics. This, in turn, is a way to amplify the current discussion regarding the need for clear orientation to help social marketers implement interventions effectively.

2. GENERAL BACKGROUND

2.1.Social Marketing and Healthy Behaviour

There is growing recognition in social marketing of its importance for the promotion of healthy behaviours and benefits for public health (Manikam & Russell – Bennett, 2016). The idea that the principles of marketing could be adopted in the promotion and education of health to achieve social goals has grown in popularity and use within public health systems (Darsareh et al., 2018). For example, in some behaviours, such as healthy eating, social marketing action made children more willing to try new healthy foods (Bellows et al., 2009) and improved the food choices of teens through persuasive messages (Brennan et al., 2010). Others, such as child immunization, a campaign that took place in Australia, reached the goal of immunizing 96% (1.7 million) Australian children between the age of 5 and 12 years of age through vaccination (Carrol & Van Veen, 2002). In the prevention of HIV, 31.7% of the participants (homosexuals and bisexuals) exposed to the *Hombres Sanos* campaign adopted at least one behaviour that could reduce the risk of infection through HIV (Martínez – Donate, 2009).

The application of this body of knowledge in the conception, implementation and evaluation of the interventions offered more precision for analysis and segmentation of the audience, and it broadened the knowledge of variables such as attitudes and preferences and improved the means of delivery of more targeted messages to communicate with the target audience (Ling et al., 1992).

Social marketing professionals seek to create new types of values for actors involved in the adoption of healthy behaviours (Meroni & Sangiorgi, 2011). Strategies, such as the use of incentives and special promotions that use rewards to encourage change were recognized as effective practices (Evans, 2006). The example of a health services intervention that included

support group sessions to aid students with difficulties dealing with bullying rewarded the participants with a celebratory party, certificates and the Stop Bullying Now t-shirt in exchange for participation in the support group. These incentives assured the involvement of eleven school nurses that voluntarily conducted twelve biweekly sessions, after the intervention, students related that they were significantly less bothered by the provocations and more resilient in the management of bullying situations in the school environment (Vessey & O'Neill, 2011).

Another important strategy used by social marketers is the monitoring of actions (Andreasen, 2002). The professionals are often committed to following the progress and changes resulting from the intervention, assuming more realistic expectations from the results. In an intervention that involved the Welsh Fire Service, the Bernie Campaign (2010), was created with the challenge of reducing incidents of arson in certain communities, the monitoring took place in several ways, the first of them was the control of records of fires; the second was the evaluation through another community (control group) with similar features, to prevent the weather conditions interfering with the results; and lastly, the follow up on six full weeks of intervention, with post intervention interviews with stakeholders and employees of the South Wales Fire & Rescue Service (SWFRS) and partner organizations. This monitoring impacted the efficacy of the campaign which was awarded with the 2011 Chartered Institute Public Relations Excellence Award (Peattie et al., 2012).

Even with the success of social marketing practiced in the field of health promotion, selecting a theory or a model is the first step in the planning process of an intervention (Hardeman et al., 2005). A review of the social marketing literature indicated that there is strong support for the use of health psychology theories in intervention planning (e.g., SCT, TPB, TTM) (Goldberg et al., 2018). However, critics point out that the theoretical foundation of social marketing lies within inertia (Rundle-Thiele et al., 2019). The absence of theoretical innovation makes it difficult for the comprehension and explanation of how and why social marketing interventions were either successful, or failed, in the achievement of definite objectives (Nilsen, 2015).

Most theories used, especially in the health context, tend to highlight individual abilities, with limited references to contextual and social factors that can be described as facilitators or barriers to change (French & Russell–Bennett, 2015). To broaden the comprehension of social marketing interventions, researchers suggest increasing the use of available theoretical foundations and move from behaviour theories to theories that explain the achieved changes (Rundle–Thiele et al., 2019).

2.2.Theories and Models of Health Behaviour Change

Theories of behaviour change seek to answer why behaviours change, they incorporate variables, constructs, and methods to explain relationships or causal pathways that impact change (Michie et al., 2008). Models are characterized as smaller formal concepts that represent reality (Savage, 1990). They are often more descriptive than theories, and an example would be the "Transtheoretical Model" (TM), which will be discussed in more detail later.

The use of useful theories that explain or predict the relationships between the constructs assists the operationalization of interventions, given that the invisible mechanisms in behaviour change processes become visible through theories and models (Dotzauer, 2018). There are over eighty models and theories related to the comprehension or prediction of behaviours (Davis et al., 2015; Gainforth et al., 2015). However there are few studies to offer orientations on which theory to use, to what purpose, and which are the most effective at delivering certain changes in behaviour (Rundle-Thiele et al., 2019).

Regarding health, interventions happen to encourage healthy behaviours. Healthy behaviours are manifest behavioural patterns, habits and actions which relate to the

maintenance, restoration, and improvement of health (Conner & Norman, 1998), that is, any activity accomplished with the aim of preventing or detecting diseases to improve health and well-being. It is common sense that there is a relationship between good health and personal habits.

Many people are aware of which healthy behaviours should be adopted in the course of life. Nevertheless, they do not often practice them, and in addition they engage in practices that can harm their health (e.g., smoking or alcohol). It is this contradiction that drives health experts and researchers, as well as social marketing scholars and practitioners, to devote their efforts in an attempt to understand this phenomenon (Dotzauer, 2018). The dilemma or challenge is, therefore, to understand what the best way is to encourage or persuade people to adopt healthy behaviours.

This venture is key in the area of health psychology which is concerned with understanding the relationship between behaviour and health, in a psychosocial dimension, and developing theories of health-related behaviour change, to intervene in the behaviours of individuals or groups exposed to different diseases and/or with poor health (Taylor et al., 1999). It is essential to try to explain: i) why some or many people do not do what they know is important for their health; and ii) why some people are more able to adopt healthy habits than others. Motivated by the desire to design interventions to change the prevalence of such behaviours and to improve the health of individuals and populations, health scholars along with social marketing researchers and professionals. They are concerned with identifying effective evidence of theories and models that are applied in empirical studies related to health (Luca & Suggs, 2013; Painter et al., 2008).

The study by Davis et al. (2015), for instance, searched in six databases (i.e., PsycINFO, Econlit, Cochrane Database of Systematic reviews, International Bibliography of Social Sciences, EMBASE and MEDLINE) between the years of 1960 and 2012 for studies that applied behaviour change theory, three theories were more frequent, representing 56% of the total of 256 articles considered: SCT, Transtheoretical Model(TM), and the TPB. Equally in social marketing, a systematic revision of the literature in 12 databases (i.e., PsycInfo, Medline, Embase, PubMed, EconLit, Social Policy and Practice, Cochrane Database of Systematic Reviews, Health Technology Assessment Database, Database of Abstracts of Reviews of Effects, and Business Source Complete Database, JSTOR, and Web of Science), between 2000 and 2015, indicated that the behavioural theories most commonly used in social marketing research are: Cognitive Theory (Bandura, 1977), TPB (Ajzen, 1991), and TM (Prochaska et al., 1994), showing that 23% of the 143 interventions used some theory or model in the formative research, another 110 interventions (approximately 73%) did not explicitly make use of theoretical fundamentals (Truong & Dang, 2017).

3. THE BEHAVIOUR CHANGE WHEEL

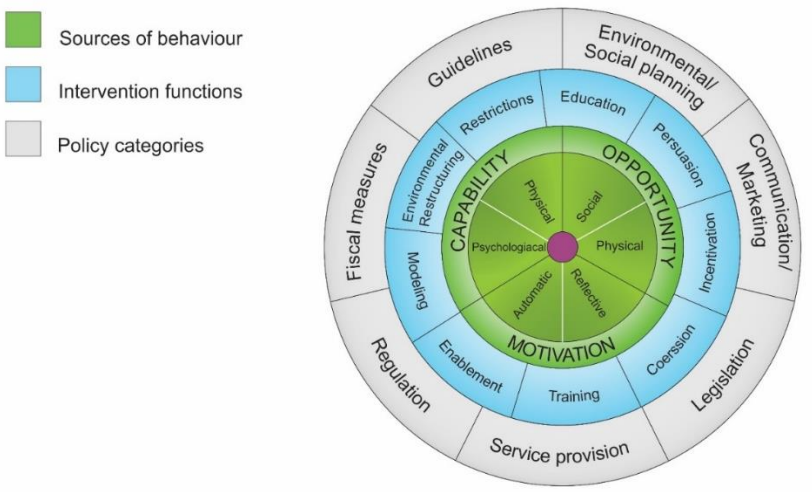
The Behaviour Change Wheel (BCW) is a theoretical framework which consists of multiple health behaviour models, designed for the systematic development of interventions to support behaviour change (Michie et al., 2010). A recent model, with its first publication in 2011, BCW sought to answer the question: How can we design effective interventions? This has led to the creation of a systematic method to help understand the behaviour that needs to be changed; to use a framework that points to the types of intervention that are likely to be effective; to consider the full range of options available, to use a systematic method for selecting behaviour change techniques.

The BCW is based on the principle that, for a behaviour to manifest, there are three conditions that need to be in place, the system known as COM-B, an acronym that represents Capability (Psychological and physical ability to perform said behaviour, to know what to do and how to do it), Opportunity (the social environment needs to be conducive to this behaviour),

Motivation and Behaviour (Components of the dynamic system in which the behaviour is embedded) (Michie et al, 2014a, b). The exploitation of a given behaviour in relation to COM-B components helps identify which determinants need to be addressed to achieve the behaviour change.

The BCW is structured in a circular format, divided into three layers (Figure 1). The first layer (the central axis) corresponds to the three conditions that make up the COM-B model. The second layer consists of the nine functions of the intervention and, in the outermost layer (the third), there are seven policy categories in which the functions of the intervention are applicable. The functions of the intervention are education, persuasion, incentive, coercion, training, restraint, restructuring of the environment, modelling and training (Table 1). These functions should be chosen based on the analysis of the desired target behaviour, which requires judgment on which is the most appropriate for each context. The policy categories are legislation, guidelines, communication/marketing, regulation, fiscal measures, environmental/social planning and delivery of service. They allow public authorities to support and enact the interventions they deem to be the most effective in changing the behaviour of individuals and groups (Table 2). The BCW is based on systematic evidence, which in the health field is related to science-based knowledge, such as the frequency and spread of the disease, the causes and consequences of the disease, as well as the efficiency, effectiveness and cost of the interventions (Victoria et al., 2004).

Figure 1. The Behaviour Change Wheel



Source: Michie et al. (2015)

Table 1. Intervention functions in the Behaviour Change Wheel

Intervention	Description
Education	Increasing knowledge or understanding
Incentivisation	Creating expectation of reward
Enablement	Increasing means/reducing barriers to increase capability or opportunity beyond education, training, and environmental restructuring respectively
Training	Imparting skills
Coercion	Creating expectation of punishment or cost
Restriction	Using rules to reduce the opportunity to engage in the target behaviour (or increase the opportunity to engage in competing behaviours)
Environmental restructuring	Changing the physical and social context

Modelling	Providing an example for people to aspire to or imitate

Source: Michie et al. (2015, p. 111)

Table 2. Policy categories in the Behaviour Change Wheel

Policy categories	Description
Communication/ marketing	Using print, electronic, telephonic, or broadcast media
Guidelines	Creating documents that recommend or mandate practice
Fiscal measures	Using the tax system to reduce or increase the financial cost
Regulation	Establishing rules or principles of behaviour or practice
Legislation	Making or changing laws
Environmental/social planning	Designing and/or controlling the physical or social environment
Service provision	Delivering a service

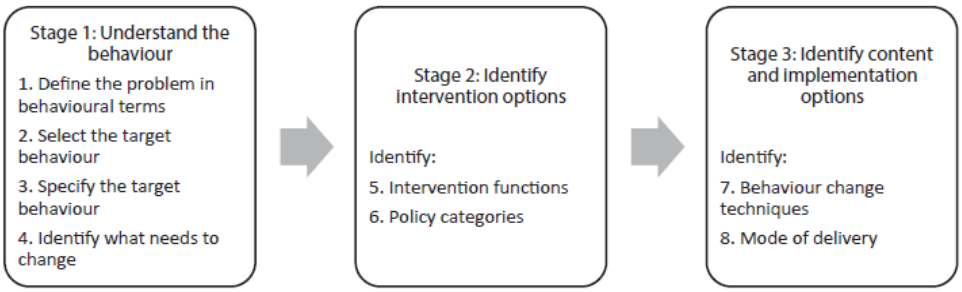
Source: Michie et al. (2015, p.135)

Understanding the stages of the BCW

The process of developing interventions using the BCW is described in detail and involves three main steps: Stage 1: Understanding the behaviour and identifying what needs to change; Stage 2: Identifying Intervention Functions; and Stage 3: Identifying content and the relevant 'Mode of Delivery' for the intervention.

These can be further subdivided into key steps including (i) defining the problem in behavioural terms; (ii) selecting the target behaviour; (iii) specifying the target behaviour; (iv) identifying what needs to change; (v) identifying appropriate intervention functions; (vi) identifying policy categories; (vii) identifying behaviour change techniques; and (viii) determining the mode of delivery. The Figure 2 shows all these steps.

Figure 2. The BCW Intervention Design Process



Source: Michie et al. (2015, p.31)

Stage 1— Understand the Behaviour and Identify What Needs to Change

Step 1: *Define the problem in behavioural terms*

For this initial stage, intervention designers are encouraged to determine the problem in behavioural terms, indicating who is executing the behaviour and what that behaviour is. It is necessary to consider the problem in terms of results, e.g., HIV prevention, does not define which specific behaviour is involved. When determining "who" (the sexually promiscuous/active) and "what" (not using condoms during sex) we can state the behaviour intended to be addressed in an intervention.

Step 2: *Select the target behaviour*
This stage involved considering all possible behaviours which could be changed in the intervention. The planners are encouraged to think about the possibilities of relevant behaviours for the problem. For the selection of a behaviour, one must consider: i) the impact of changing the behaviour; ii) the probability of effecting behaviour change; iii) the effect of the change (positive or negative).

Step 3: *Specify the target behaviours*
The target behaviours must be specified by responding to who needs to do what, when they need to do it, where, how often and who with. An example of how to be more specific is "to buy and use condoms every time you engage in sexual intercourse" unlike "be more worried about AIDS". For the designers, this specification allows more focus when it comes to understanding the behaviours.

Step 4: *Identify what needs to change*
To alter the behaviour, it is necessary to understand why behaviours occur and what needs to change to achieve the desired behaviour. The COM-B model assists in these responses. According to the model, the behaviour is part of an interaction system involving these components. To broaden the comprehension of behaviour and improve the implementation of the intervention, the Theoretical Domains Framework -TDF can also be used, it consists of 14 domains that can be related to COM-B (Michie et al., 2014), for example, knowledge, skills, memory, attention and decisive processes, social and professional roles, identity, self-confidence; optimism, beliefs about the consequences, intentions, objectives, reinforcement, emotions, environmental context and resources, and social influences.

Stage 2 — Understand the Behaviour and Identify What Needs to Change
Step 5: *Identify intervention functions*
In this phase, intervention designers must evaluate the nine intervention functions and choose the ones that align best with the desired behaviour. For instance, a mass media campaign to promote safe intercourse may contain an element that is educational (to provide new information about the benefits of protection during the intercourse), but also be presented in a way that intends to be persuasive (generating feelings and worries about the risks of sexually transmitted diseases).

Step 6: *Policy categories*
This is the moment directed towards the analysis of policy categories regulation and useful legislation to help achieve behaviour change and consider the external factors that impact the change.

Stage 3 — Modelling Process and Outcomes
Step 7: *Identify behavioural change techniques*
The BCW takes account of the broad range of factors that influence behaviour change interventions and is supported by a taxonomy of ninety-three behaviour change techniques. Behaviour change techniques (BCT) are defined as observable and replicable components of behaviour change interventions that represent the proposed active ingredients of an intervention. The BCT taxonomy provides standardised and coherent terminology to aid the description and identification of BCT. Behaviour change techniques that may be used in interventions within any behavioural domain (e.g., providing information on health consequences, setting goals, restructuring the physical environment (Michie et al., 2013). The BCTTv1 is available as an application and the UCL Centre for Behaviour Change has recently

launched free online training to use the taxonomy (www.bct-taxonomy.com). The BCT taxonomy is a validated tool that can be applied retrospectively to descriptions of interventions. It provides a toolkit offering structure and coherence to the processes of extraction and synthesis of intervention components (Govender et al., 2015).

Interventions based on theory can be more effective (Ivers et al., 2012), and where theory use is scant, identifying the intervention functions and behaviour change techniques used can reveal the implicit theoretical assumptions underpinning interventions (Gardner et al., 2010). For example, providing information on the health impact of sitting assumes sedentary behaviour is driven by a lack of knowledge, and that increasing knowledge will change behaviour (Abraham & Michie, 2008). Where techniques are found to be associated with promising interventions, this can inform hypothesising around the possible psychological or alternative pathways through which sedentary behaviour might best be reduced (Gardner et al., 2015).

Step 8: *Identify Mode of Delivery*

Finally, we have the phase of formulating an intervention plan and we plan how it should be delivered. Create detailed intervention specifications, covering all aspects of content and delivery of the intervention and structured around the chosen behaviour change techniques (content) and modes of delivery. For example, whether the intervention will be delivered face-to-face, either to groups or individuals, or by website, mobile app, or print media to list just a few of the options. The sequencing of these activities will depend on the context and goals of the key stakeholders.

4. THE BEHAVIOURAL CHANGE WHEEL AND SOCIAL MARKETING

The role of social marketing in health within the broader domain of intervention methods involves, but is not limited to, community engagement, health advertising, incentives for the development of public policies, the communication of mass media, digital media, and social networks (French & Gordon, 2015). This leads to the reflection that instead of social marketing being a unique reference, it seeks, through a systemic approach, to gather knowledge and insights to guide the development and implementation of more effective interventions. By doing so, it leaves space open for the introduction of singular approaches and behaviour change methods, such as the Behaviour Change Wheel.

4.1.Social Marketing Consistency Criteria

To differentiate the contributions of social marketing from other forms of influencing behaviour, a group of criteria was developed to decide if an intervention can be described as social marketing (Andreasen, 2002; French & Blair-Stevens, 2005). These criteria attempts to identify the central elements in social marketing practices, as an approach to bring about behaviour change for the benefit of society, aggregated legitimacy for the actions of social marketing when pointing out elements that distinguish them from the other interventions. While the theoretical framework in social marketing is often considered weak (Spotswood et al., 2012), the consolidations of the consistency criteria are adding depth to the field. These criteria have been well received and are contributing to the development of social marketing theory and practice (Vargo & Lush, 2004).

French (2012) developed one of the most recent criteria and which provides a list of verifications that can help identify whether theories and models can contribute to the quality and efficacy of social marketing interventions. In this way, we related the criteria of consistency in social marketing and the stages of BCW (Table 4) and found that, overall, the BCW stages align with the criteria.

Table 4. Comparing Social Marketing Consistency Criteria and BCW

French (2012) criteria	BCW stages
1. Citizen orientation: Understanding of the audience, based on research, combining data from different sources and perspectives	1. Define the problem in behavioural terms
2. Behaviour: Has a clear focus on behaviour, based on a strong behavioural analysis, with specific behaviour goals	2. Select the target behaviour
3. Theory: Behavioural theory is used to assist the development implementation and evaluation of programs	7. Behaviour change techniques (BCT)
4. Insight: Based on developing a deeper "insight" approach focusing on what "moves and motivates"	4. Identify what needs to change
5. Exchange/value: Incorporates an "exchange" analysis that provides understanding of costs and benefits associated with target behaviours and the development of possible interventions	5. Intervention function 6. Policy categories
6. Competition: Has two elements: competition analysis to understand what competes for the time and attention of the audience and "competition planning" to reduce the impact of these factors	7. Behaviour change techniques (BCT)
7. Segmentation: Identifies groups who share similar views and behaviours and can be influenced in similar ways	3. Specify the target behaviour
8. Methods mix: Brings together the most effective mix of interventions to influence the target behaviour	8. Mode of delivery

Criterion 1, the citizen orientation criteria, suggests that social marketing interventions should have a solid foundation based on customer understanding, thereby focusing on the comprehension of the behaviour, attitudes, and beliefs of the individual (French, 2012). Likewise, according to BCW guidelines, the first step to begin an intervention is to run a diagnosis of the problem, that is, the behaviour to be altered, highlighting the profile that needs to change using COM-B (Michie et al., 2014). The BCW can be applied at any level of behaviour change, from individuals to groups, populations, and subpopulations.

In the second criterion, the behaviour analysis is conducted to expand the view of patterns and behavioural tendencies; social marketing interventions are developed towards specific behaviours or groups of related behaviours. French (2012) suggests that there are four different behaviour issues that need to be taken into account: formation/establishment of behaviours; modification of behaviours, maintenance/reinforcement of behaviour; behaviour change. Similarly, the BCW defends that behaviours do not exist in isolation, but happen within a context of other behaviours of the same or other individuals that interact with a system, and for that reason, it is critical to make the choice regarding the behaviour with which to intervene when taking into consideration results derived from behavioural analysis: the likely impact, if the behaviour was altered; the level of difficulty involved in changing the behaviour; how central the behaviour is to the individual; ease of measurement. These aspects correspond with those suggested by French (2012).

The third criterion recommends that theory should guide the development of social marketing interventions, encouraging a theoretical approach that is open, reflective, up-to-date, and which takes into consideration a wide range of research fields (French, 2012). This criterion confirms the potential of the BCW for social marketing interventions, because the BCW is a recent approach directed towards behavioural change that makes use of BCT, which can be considered theoretical determinants of behaviour (Michie et al., 2013). The current BCT taxonomy is a methodological tool that specifies the content of the intervention and establishes links to the theory.

Criterion 4 indicates that to understand the main influences on the behaviour and how it is impacted, it is fundamental to develop useful insights about what the target audience thinks, needs, believes and does. This approach is similar to BCW, which proposes the identification of what needs to change in order to reach the desired behaviour change in its fourth step. To achieve this, the intervention designers must dedicate time and effort to completely understand the target audience.

In the 5th criterion, the targeted behaviour is associated with costs, benefits and values, and is associated with "exchange", that is, the behaviour is seen from a rational perspective based on the evaluation of rewards. With this, the interventions are developed with the aim of creating social value for the citizen and/or society in general. Incentives, disincentives, sanctions, and rewards are considered according to specific audiences, based on what they value and how they make decisions. This criterion relates to two BCW steps: the definition of the intervention functions (step 5) and political categories (step 6), which represent broad categories of ways through which an intervention can alter the behaviour. The BCW provides a systematic and theoretically guided method to identify the interventions functions and gives support to policies that are expected to be effective, this is expected to increase the motivation to be involved in the desired behaviour thorough ways of rewarding the change; developing appropriate beliefs, e.g., the benefits of changing, the approval of others, personal relevance, the confidence to change, the development of positive feeling about the change (Michie et al., 2015).

In criterion number 6, French (2012) indicates that strategies should be developed to reduce the impact of competition on the targeted behaviour; for this to work, it is important to understand the influence of the internal psychological factors: pleasure, desire, etc., and external factors: economic, social, cultural, and environmental influences. In BCW, these strategies are referred to as Behaviour Change Techniques (BCT), which are the active mechanisms of change defined from an internal and external analysis and which can be used alone or in combination with any of the other BCT.

The 7th criterion presents the segmentation used in social marketing interventions. This segmentation uses demographic, observational and psychographic data to identify similar groups that can be influenced in equal manners. In the BCW, the same segmentation is carried out in step 3, which specifies the target behaviour in terms of who needs to accomplish the behaviour; what needs to be done to achieve the target behaviour; what needs to be done differently to achieve the desired change; and with whom it should be carried out.

The last of the criteria gathers effective methods to influence the targeted behaviour. The methods are based on insights into the target audience of interventions, and feasibility analyses. From this gathering of data, social marketing professionals can choose the “types” and “ways” to develop more effective interventions. This feature is like the delivery modes presented in the final step of BCW, which refer to ways of applying the interventions. The delivery modes are formed by the content (what should be delivered); provider (who delivers); configuration (where it will be delivered); recipient (to whom it will be delivered); intensity (how many contacts will be delivered); duration (over how long a period); and fidelity (in which measure the expected behaviour will be delivered).

4.2.Ten Social Marketing Theory Development Goals

In the discussion about how to strengthen the social marketing theoretical field, Rundle-Thiele et al. (2019) proposed ten goals that provide guidelines that, if applied, have the potential to be conductors of behavioural change. If the suggested goals are met, it will contribute to the construction of the theory in marketing throughout time and will stimulate the development of interventions that are theoretically guided. Here we seek to analyse the application of the BCW in social marketing from the ten goals and we found indications that the BCW is theoretically

sound when applied to social marketing.

Goal 1: Use available theory
The first goal defends the use, by the researchers, of the available theoretical foundations to aid understanding of which constructions can explain and predict changes in behaviour. The BCW is a newly available principle in health psychology, applying it to social marketing will enable the identification of conductors of current behaviours and the changes in the way people behave, both as individuals and in groups, in a rigorous, evidence-based way to better understand what does and does not work in an intervention.

Goal 2: Use longitudinal research designs for program evaluation
The second goal explains that due to the differences between behaviour and change of behaviour, the determinants of behaviour can be distinguished, to this end, wider studies (almost - experimental or randomized clinical trials) need to be incentivised and their results evaluated. This goal is aligned with the BCW which can be considered a guide to design behaviour change interventions for a variety of behaviours in a wide variety of contexts. The BCW is a potential tool not only to aid the intervention project, but also to improve the evaluation process of the intervention and the development of the theory. It provides a systematic way to characterize interventions that enable their outcomes to be linked to mechanisms of action, and that can help diagnose why an intervention may have failed in achieving the desired goal. In the APEASE criteria, devotes time and effort to fully understanding how effective the intervention is by shifting behaviour in the desired direction.

Goal 3: Apply theory identification processes
Goal 3 focuses on the adoption of a theory selection process that seeks to understand the predictive capacity of behaviour change, providing practical guides that incentivise researchers to compare theories and at the same time build a foundation of evidence of advanced knowledge of behavioural change. The BCW fulfils this objective, because it establishes a systematic method to understand behaviour, and connecting this understanding to techniques to alter the behaviour in a clear way that enables social marketing practitioners and political decision-makers to adopt an approach to design interventions with a higher probability of effectiveness (Michie et al., 2015).

Goal 4: Deliver strong levels of theory use
The fourth goal emphasises the need for a clear and explicit report, describing how the elements of intervention and theory are connected. This is plausible when making use of the BCW, which has its stages well defined, a group of techniques, intervention functions and systematic political categories, able to thoroughly report how the interventions are formed and tested with the use of theory.

Goal 5: Widen theory focus beyond the dominant theories currently used
This goal makes a call for social marketing research to analyse behaviour as a dynamic process instead of static due to the final aim of social marketing being actual behaviour change, to that end, Rundle-Thiele et al. (2019) propose to change the conceptual focus and widen the perception of what determines change to beyond the dominant theories. The BCW can be configured as a model which meets this goal as it suggests the wheel of change as a tool that supports the designing of interventions, altering behaviour and helping to determine how well the interventions are delivered, making use of BCT Taxonomy which are active ingredients that either alone or in combination with other BCT are mechanisms of change that provide consistent language to describe the content of the intervention (Michie et al., 2015).

Goal 6: Build social marketing theory

Goal 6 indicates that, traditionally, the theories used in the applications of social marketing are borrowed from other disciplines (e.g., psychology, behavioural science, etc.), in such a way that social marketing was concentrated in individual psychological predispositions (e.g., attitudes, intentions, beliefs). The dominant models of health psychology have been widely studied in social marketing interventions, with greater attention on the individual without considering other influential factors, such as external factors. When considering the political categories, especially, 'fiscal' (using the tax system to reduce or increase the financial cost); 'regulation' (establishing rules or principles of behaviour or practice); 'legislation' (making or changing laws); 'environmental/social planning' (designing and/or controlling the physical or social environment), the BCW widens the theoretical lens and advances understanding of how change can occur within complex systems.

Goal 7: Build theories explaining why people don't change

In association with goals 3 and 6, goal 7 defends the fact that social marketing needs to identify alternatives that enable understanding of the explanatory and predictive capacity of the behaviours, hence, it is essential to seek explanation for the factors that do not explain the behaviour change. Rundle-Thiele et al., (2019) exemplify with the use of the ECAC model, applied to the active school travel context, which extended the focus of the research to beyond the individual psychological factors. Similarly, the BCW seeks to understand the way in which the external behaviour limits behaviour (Michie et al., 2015).

Goal 8: Apply dynamic research methodologies

This goal refers to the need to have dynamic methodologies to assess the social marketing intervention, Rundle-Thiele et al. (2019) suggest a change of focus to more analytical methods that can investigate what drives change and how to evaluate it precisely. The BCW was developed to meet three criteria which are not met by traditional behaviour change frameworks, they are: comprehensiveness, coherence, and connection to a model of behaviour. From this point of view, the BCW can be considered a promising methodology, tools such as the COM-B model and BCT can be used to understand behaviour as the first aspect in an intervention project, they can also be used to specify mediators of behaviour change, allowing assessments not only to investigate whether behaviour has changed, but also the mechanism through which any change occurred as a foundation to optimize the effectiveness of the intervention.

Goal 9: Extend the theory to understand desired and undesired change

Similarly, to the previous goal, goal 9 defends that social marketing researchers need to consider the complexities and the multifaceted nature of behavioural change by using new methodologies, considering that behavioural change can occur in different ways: desired or undesired; linear, non-linear or discontinued (Mitchell & James, 2001; Stritch, 2017). The BCW uses the COM-B model for this, in which change depends on an assessment of one or more aspects: capability, opportunity, and motivation related to the behaviour itself or to competing behaviours. As an example of capability, which can be physical (have physical skills, strength, or endurance) to create behaviours or "psychological" (have the knowledge, psychological skills, strength) to execute the behaviour and the change, this reinforces that the BCW considers these complexities in the implementation of the interventions.

Goal 10: Increase replication

The last goal is about the absence of studies which can be replicated, due to the lack of attention paid to the effective evaluation of the results, weakening the advance in knowledge. Rundle-

Thiele et al. (2019), claim that social marketing theories and interventions need to be tested in a natural environment with people living their normal lives, considering a diverse range of target populations and target behaviours. In this sense, the BCW proposal is to be a guide to proceeding, step-by-step, based on their extensive experience and expertise, intended for political decision makers, intervention designers, researchers, and practitioners. The BCW is designed to be useful in the replication process of the interventions because it seeks to systematize the theory and the evidence to conceive and evaluate behaviour change interventions (Michie et al., 2015).

5. FINAL CONSIDERATIONS

A wide body of social marketing research highlights the use of dominant theories applied to an extremely diversified group of social problems, with an emphasis on behaviours that affect individuals, either on health or other contexts (Andreasen, 1995; Kotler & Roberto, 1989). There are clearly situations for which traditional models of rational choice, such as the TPB, can explain and predict behaviour with plenty of success. However, greater attention to the advance of social marketing theory and practice may be a prelude to a new paradigm of behavioural change, in which the focus on the individual gives space to a macro vision made up of a complex system of actors and contexts into which the change is inserted.

Multiple BCW interventions have led to significant results in behavioural terms (Michie et al., 2015). In this article, we show that the BCW is conceptually linked to social marketing criteria and goals. Social marketing practitioners may benefit from the BCW to elaborate interventions and campaigns, develop guidelines, and provide recommendations to prevent and treat behaviours that pose a risk to public health. The BCW clarifies the elements most appropriate to invest in to change behaviour and emphasises the need to build a base of evidence for research and practice. As part of the social marketing toolkit, the BCW offers the best conditions for achieving effective and socially beneficial changes.

The research suggested that there is a relationship between sources of behaviour, Social Marketing goals and interventions. For example, aiming to empower individuals or to develop the dimension of capability, interventions such as education should be used to improve knowledge or understanding. So, education can be used to achieve goals 1 (using available theory) and 2 (using longitudinal research designs for program evaluation). Alternatively, interventions such as training, which imparting skills, can be used to achieve goals 4 (delivering strong levels of theory use), 5 (widen theory focus beyond the dominant theories currently used) and 8 (to apply dynamic research methodologies), as well as interventions such as incentivisation, which create expectation of reward, can be used to achieve goal 10 (to increase replication) and interventions such as enablement, that increase capability or opportunity, can be used to achieve goals 3 (to apply theory identification processes) and 9 (to extend the theory to understand desired and undesired change).

On the one hand, in terms of opportunities, this research argued that to achieve goals 6 (build social marketing theory) and 7 (build theories explaining why people don't change), Social Marketing needs to promote an environmental restructuring to change the physical and social context, or modelling to provide an example for people to aspire to or imitate. On the other hand, from a negative perspective of motivation, coercion can create an expectation of punishment or cost, as well as constraint, that reduce the opportunity to engage, can be used in the political and structural dimensions. However, it should be noted that their performance is highly dependent on enforcement and the extent of the penalty.

Although these relationships have been identified, it is necessary to emphasise the importance and differentiation of each behaviour in each context. In this sense, future research can explore the differences between social marketing interventions based on different theoretical frameworks, taking into account individual, collective and structural changes.

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