



## Review

## The barrier-belief approach in the counseling of physical activity

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## ABSTRACT

**Objective:** To understand inactivity and relapse from PA, and to develop theory-based behavior change strategies to stimulate and support maintenance of PA.**Methods:** We conducted a literature search to explore barriers to PA. Social cognitive theories and empirical evidence were evaluated and guided the process developing a theoretical framework and counseling strategies.**Results:** A theoretical framework is presented to understand why people do not engage in PA and often relapse once they started PA. A distinction is made between three related types of BBs. In PA counseling these three beliefs are addressed using four different BB behavior change strategies.**Conclusion:** BB counseling aims to develop an individual pattern of PA for the long term that is adapted to the (often limited) motivation of the client, thereby preventing the occurrence of BBs. The client will learn to cope with factors that may inhibit PA in the future.**Practice implications:** The BBs approach composes a way of counseling around the central construct of barrier-beliefs to stimulate engagement in PA independently, in the long term.

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## Contents

1. Introduction . . . . .	130
2. The theoretical background . . . . .	130
2.1. Barriers inhibit PA . . . . .	130
2.2. Barrier-beliefs and goals . . . . .	130
2.3. Attributions, self-efficacy and negative outcome expectations . . . . .	130
2.3.1. Attributions . . . . .	130
2.3.2. Self-efficacy expectations . . . . .	131
2.3.3. Negative outcome expectations . . . . .	131
2.4. Relating different barrier-beliefs . . . . .	131
2.5. Functions of barrier beliefs . . . . .	131
2.6. Changeability of barrier-beliefs . . . . .	132
3. The barrier-beliefs counseling . . . . .	132
3.1. General principles of the counseling . . . . .	132
3.2. Designing action . . . . .	132
3.2.1. Installing minimal motivation . . . . .	132

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3.2.2.	Formulating specific goals and goal related beliefs . . . . .	132
3.2.3.	Investigation of barrier-beliefs . . . . .	132
3.3.	The BB behavior change strategies. . . . .	133
3.3.1.	Changing means . . . . .	133
3.3.2.	Change goals to change BBs. . . . .	134
3.3.3.	Restructuring/changing BBs . . . . .	134
3.3.4.	Accepting the investments demanded by BBs . . . . .	134
4.	Discussion and conclusion. . . . .	134
	References . . . . .	135

## 1. Introduction

Physical inactivity is a worldwide growing problem with one out of five adults being physically inactive [1]. Physical inactivity is a risk factor for chronic diseases such as diabetes and cardiovascular diseases, overweight and several cancers [2]. Regular physical activity (PA) is positively associated with fitness and health related benefits and related to an estimated 30% reduction in risk for all-cause mortality among adults [3]. Engaging in regular, moderate-intensity PA is important for the promotion of physical and mental well-being [4], and the prevention and management of many chronic diseases [5–7]. In addition, stopping or markedly reducing PA can result in a significant reversal of initial health improvements [8,9]. Thus, to improve physical and mental health and to prevent illness, it is important that people engage in PA on a regular basis. However, despite the well-known benefits of PA and the availability of effective PA interventions, many people do not engage in sufficient PA. For example, around the world percentages of physical inactivity vary from 20% up to 70% in different countries, with about 40% in the United States of America, and over 60% in the United Kingdom [10].

In addition, when people start engaging in PA, they often relapse to inactivity, even when they take part in PA interventions [11]: Results of systematic reviews and meta-analyses of long-term effects indicate that a majority of individuals relapse to a less active or to an inactive status when intervention support is no longer provided [12–15]. However, only sustained PA can have relevant effects on health and the prevention of illness. For a sustainable behavioral change, Greaves' review [20] suggests that future interventions should add behavior maintenance strategies. These strategies should target the most influential determinants of PA maintenance [17–21].

In conclusion, PA interventions can lead to higher levels of PA, which is related to several beneficial physical outcomes. However, many people do not engage in sufficient levels of PA and do not use these interventions, and when they do use PA interventions, they often relapse. Therefore, there is a need for understanding inactivity and relapse from PA, and for theory-based behavior change strategies to stimulate and support maintenance of PA.

## 2. The theoretical background

### 2.1. Barriers inhibit PA

In research on PA, the general term barrier is often used to refer to very different factors that hold people from initiating PA or that cause relapse from PA. In summary, these studies mention barriers such as, lack of time, high financial costs, health complaints, lack of safety, lack of facilities, bad weather, no transport, no family assistance or child care support [22–30]. In these studies barriers are often seen as more or less fixed factors that inhibit PA, and it is generally agreed that focusing on barriers is important to counter relapse [31–42].

From a psychological perspective, an important question is: 'How do these barriers influence PA?' Our answer is that the mental representations of these barriers are central. These representations become manifest in people's beliefs about their reality. In psychological theories, the most important beliefs related to barriers are attributions, self-efficacy, and negative outcome expectancies [43,44]. In the present theorizing, these three types of beliefs are called *barrier-beliefs*.

In this article we will, firstly, present a cognitive theory on motivation and relapse, and explain how the three types of barriers-beliefs play their role. The core assumption is, in line with general cognitive-behavior therapy, that barrier-beliefs are actual causes of inactivity or relapse. Secondly, in this article we will present a set of cognitive and behavioral strategies that are developed to deal with these barrier-beliefs in order to motivate PA and prevent relapse. These counseling strategies can be applied in the process of (re)starting to engage in physical exercise, as well as in supporting maintenance of physical exercise.

### 2.2. Barrier-beliefs and goals

Barrier-beliefs (BBs) regarding PA are thoughts or verbalized experiences or estimates of a person about what is keeping him or her from starting or maintaining PA. BBs are a cluster of beliefs that all refer to people's perception of the more or less specific or concrete factors that stand in the way of engaging in or maintaining PA. Importantly, the starting point is that people have at least some knowledge on the benefits of PA: BBs can develop when people feel they should set a PA goal, when they are setting a PA goal, when they have set a PA goal, or when they are working on a PA goal. BBs are related to goals in the opposite direction; they obstruct the achievement of goals by preventing or disturbing the goal related behavior. Although BBs regarding PA may have different sources – from hearing from others, through mass media, or based on the own experience – they have in common that they inhibit PA.

### 2.3. Attributions, self-efficacy and negative outcome expectations

BBs manifest in one of three types; as attributions of PA-inhibiting causes, as self-efficacy expectations with regard to engaging in PA, and as negative outcome expectations of PA.

#### 2.3.1. Attributions

Attributions are beliefs about the causes of behaviors, including one's own PA behavior [45,46]. People spontaneously develop attributions for different reasons but one reason is problem solving [47]: When people notice that their goal accomplishments are inhibited, they start seeking for the cause of the inhibition. In the framework of PA, people's attributions are their diagnosis about what is holding them from engaging in PA. The concept of perceived barriers actually refers to people's attributions to not engage in PA or relapse from PA [48]. Attributions may be based on undeniable facts (e.g., 'I cannot walk because my leg is broken'), on interpretations of experiences or

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