

Original article

Psychological predictors of the combined adoption of physical exercise and dietary change among adults with hypercholesterolemia

Prédicteurs psychologiques du changement combiné de comportements alimentaires et d'activité physique chez les adultes souffrant d'hypercholestérolémie

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Abstract

Background. – Although combined changes in eating habits and physical activity are pivotal to hypercholesterolemia management and the prevention of cardiovascular disease, little is known about the factors influencing the adoption of both behaviors by adults with hypercholesterolemia. The goal of this study was to identify psychological factors that predict a combined adoption of dietary modification and physical activity among adults with hypercholesterolemia.

Methods. – We recruited a sample of 1100 adults with hypercholesterolemia (56.9% male, mean age = 56.5 years) through a nationally representative online panel. Participants reported their physical activity using the International Physical Activity Questionnaire (IPAQ) and their eating habits using a Food-Frequency Questionnaire (FFQ). We assessed a comprehensive set of psychological variables, including hypercholesterolemia knowledge and perception, patient's cardiovascular history, doctor–patient relationship, social-cognitive beliefs, and personality traits. Based on IPAQ and FFQ scores, we classified participants into four groups (dietary modification plus physical exercise, dietary modification, physical exercise, passive).

Results. – Our analysis showed that subjective hypercholesterolemia knowledge, beliefs about the effects of hypercholesterolemia, external locus of control (other people and chance), nutrition and physical exercise self-efficacy, and trait self-control significantly influenced the simultaneous adoption of physical exercise and dietary modification.

Conclusions. – This study highlights the importance of psychological factors in predicting the combined adoption of physical exercise and dietary modification among adults with hypercholesterolemia. Addressing these factors could help improve hypercholesterolemia prevention strategies.

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Keywords: Physical activity; Dietary change; Hypercholesterolemia management; Psychological factors**Résumé**

Position du problème. – Alors que des changements dans les habitudes alimentaires et l'activité physique jouent un rôle primordial dans la gestion de l'hypercholestérolémie et la prévention des maladies cardiovasculaires, on sait peu de choses sur les facteurs qui influencent l'adoption de ces comportements par les adultes souffrant d'hypercholestérolémie. L'objectif de cette étude est d'identifier les facteurs psychologiques qui prédisent l'adoption conjointe de ces comportements.

Méthodes. – Un échantillon de 1100 adultes souffrant d'hypercholestérolémie (56,9 % d'hommes ; âge moyen : 56,5 ans) a été recruté par l'intermédiaire d'un panel en ligne représentatif de la population française. Les participants ont reporté leur niveau d'activité physique à l'aide de l'International Physical Activity Questionnaire (IPAQ) et leurs comportements alimentaires grâce à un questionnaire de fréquence de consommation alimentaire. Un ensemble de facteurs psychologiques potentiellement prédictifs a été mesuré au sein duquel figurent les

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connaissances et perceptions relatives à l'hypercholestérolémie, l'histoire personnelle relative aux maladies cardiovasculaires, la qualité de la relation patient–médecin ainsi que certaines croyances socio-cognitives et traits de personnalité. Grâce aux scores obtenus à l'IPAQ et au questionnaire de fréquence de consommation alimentaire, les participants ont été divisés en quatre groupes reflétant l'étendue des modifications comportementales opérées (comportements alimentaires et exercice physique ; comportements alimentaires ; exercice physique ; aucune modification).

Résultats. – L'analyse a montré que les connaissances subjectives relatives à l'hypercholestérolémie, les croyances à propos des effets attendus de l'hypercholestérolémie, le lieu de contrôle externe (chance et autres personnes), le sentiment d'auto-efficacité lié à la nutrition et l'exercice physique et le trait d'auto-contrôle influençaient significativement l'adoption combinée de changements de comportements alimentaires et d'activité physique.

Conclusion. – Cette étude souligne l'importance des facteurs psychologiques dans l'adoption combinée de changements dans les comportements alimentaires et l'exercice physique chez les adultes souffrant d'hypercholestérolémie. Agir sur ces facteurs pourrait permettre d'améliorer les stratégies de prévention de l'hypercholestérolémie.

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Mots clés : Activité physique ; Comportements alimentaires ; Gestion de l'hypercholestérolémie ; Facteurs psychologiques

1. Background

The increase of cardiovascular disease (CVD) is a concern for western societies. Indeed, it is responsible for 30% of deaths throughout the world, and this proportion should increase in the future [1]. The financial costs of CVD, comprising health care expenditure and productivity losses, place a significant burden on health care systems. These costs stand at \$313 billion in the US [2] and €196 billion in Europe [3]. A large part of CVD is preventable [4], and treating hypercholesterolemia, which is recognized as one of the main factor for CVD [5], may help to reduce significantly its prevalence [6].

The worldwide adult hypercholesterolemia rate reached 39% in 2008 [7]. As a result, reducing the prevalence of hypercholesterolemia among the adult population is becoming an important target for public health agencies. Hypercholesterolemia could easily be limited by encouraging people to adopt appropriate behaviors. Specifically, physical activity and dietary modification are considered essential for reducing hypercholesterolemia and, more generally, for fighting heart disease [8]. Combining dietary modification and physical exercise may be particularly effective in managing hypercholesterolemia [9,10]. For example, adding physical exercise to dietary modification significantly lowers low-density lipoprotein cholesterol, compared with a control group, whereas dietary modification alone has no effect [11].

However, researchers have not yet investigated the factors that influence the adoption of both physical exercise and dietary modification by adults with hypercholesterolemia. In this research, we focused on psychological factors because they have been shown to play a determinant role in the process of health behavior change [12]. People often do not engage in health behavior because of a lack of motivation [13], and psychological factors provide insights into the motivational process underlying health behavior change.

Thus, understanding the psychological factors that influence the combined adoption of these behaviors among adults with hypercholesterolemia could help improve prevention strategies.

We examined the role of several psychological factors known to influence the adoption of health behavior. First, we

investigated the role of hypercholesterolemia perceptions, because the beliefs people hold about their disease are associated with treatment adherence [14] and predict health status [15]. Similarly, previous research has found that subjective disease knowledge is crucial in determining the adoption of protective health behavior [16]. Relationships with physicians and attitudes towards them may also help to predict the joint adoption of physical exercise and dietary modification. For example, better relationships between physicians and patients increase HIV treatment adherence [17] and medication compliance [18], suggesting that positive interactions with their physician encourage patients to comply with health recommendations. Research has also shown that when patients with hypertension trust their physician, they are more likely to attempt to lose weight [19]. Socio-cognitive variables are also known to influence health behaviors. Indeed, self-efficacy, which reflects personal beliefs in one's ability to reach goals [20], is a good predictor of dietary modification [21] and physical exercise [22]. Another potential factor in predicting the adoption of physical exercise and dietary modification by adults with hypercholesterolemia is health locus of control [23]. Health locus of control is defined as the degree to which people believe that their health is influenced by their own behaviors or by external factors [24]. Finally, our model includes two personality characteristics: trait negative affectivity and trait self-control. In general, self-control has been shown to facilitate restrained eating [25] and to enhance physical exercise commitment [26]. In the same way, negative affectivity may affect hypercholesterolemia management [27]. Negative affectivity encourages unhealthy behaviors such as smoking or eating too few fruit and vegetables [28]. Although it lies outside the scope of psychology, we also investigated cardiovascular history, because patients with a family history of hypercholesterolemia report better adherence to low-cholesterol diets and physical exercise than other patients [29]. To our knowledge, this research is the first to consider the psychological factors that influence the adoption of both physical activity and dietary modification among adults with hypercholesterolemia.

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