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Journal of Sport and Health Science 13 (2024) 451–452

Commentary

Commentary on "Why people should run after positive affective experiences instead of health benefits"

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Received 18 May 2023; accepted 31 May 2023
Available online 15 June 2023

Maltagliati et al.[1] recently highlighted the vital role of affective experiences in promoting physical activity (PA). The authors suggested that positive affective experiences, rather than health benefits, can tip the balance in favor of PA over sedentary alternatives. The authors proposed a new formal decision model between PA and sedentary alternatives and reported that when health benefits are the unique reason to action, the costs of PA (e.g., effort) and the subjective value (SV) of sedentary alternatives (V_{sed}) are the main drivers of decision-making processes. While considering positive affect as an additional reason for action ($V_{affects}$), the balance between PA and sedentary alternatives is likely re-weighted. Essentially, we strongly agree with the progress made toward understanding the important role of affective mechanisms in exercise-related behavioral decision-making; yet, we would like to propose some questions about its formal decision model for consideration. More discussion may help researchers and readers to better understand the formation of this model.

First, the authors considered the SV (which can be calculated as the products of all probabilities of occurrence of each state resulting from one behavior and the value assigned to this state) of different behaviors from multidisciplinary perspectives (e.g., economics, psychology, and neurosciences), which gives us a brand-new look and a useful way to explore decision-making mechanisms underlying individuals' behavioral choices. However, we question the derivation of the formula proposed in the aforementioned study (Box 1).

Box 1. Equations for SVs of different behaviors.

$$\mathrm{SV}(PA) = -c + (1 - p_{risk})V_d^+ + p_{risk}\left(p_{benefit}V_d^+ + (1 - p_{benefit})V_d^-\right). \quad (1)$$

$$\mathrm{SV}(SED) = V_{Sed} + (1 - p_{risk})V_d^+ + p_{risk}V_d^-. \quad (2)$$

$$\mathrm{SV}(PA) - \mathrm{SV}(SED) = -c - V_{Sed} + p_{risk}\left(p_{benefit}V_d^+ + (1 - p_{benefit})V_d^- - V_d^-\right) \quad (3)$$

$$\mathrm{SV}(PA) - \mathrm{SV}(SED) = -c - V_{Sed} + p_{risk} \times p_{benefit}\left(V_d^+ - V_d^-\right). \quad (4)$$

Note: In this study, Eq. (1) presents the SV of PA; Eq. (2) presents the SV of sedentary behaviors; Eqs. (3) and (4) illustrate the difference between the SVs of PA and sedentary behaviors.

Abbreviations: c = cost of a behavior; p = probability; PA = physical activity; SED = sedentary behaviors; SV = subjective value; V = value.

Assuming that the health benefits of PA are the unique reason to action, p_{risk} and $1 - p_{risk}$ respectively refer to the probability of being in bad health or good health in the future. In the derived equation, the p_{risk} and $1 - p_{risk}$ of SV (PA) are regarded as the same as those of SV (SED) (e.g., the SV of sedentary behavior could be expressed as follows: "Watching the World Cup with friends or colleagues at home has a high value because it's something we can enjoy without much effort, which makes us feel relaxed after a busy day"). Specifically, the derivation from Eq. (3) to Eq. (4) (presented in Box 1) indicated that the p_{risk} and $1 - p_{risk}$ in different formulas were united and calculated as like terms. Nonetheless, common sense tells us that p_{risk} and $1 - p_{risk}$ should show differences in different behaviors. This means that the inconsistency of these parameters was probably not considered in the formula deduction.

Peer review under responsibility of Shanghai University of Sport.
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https://doi.org/10.1016/j.jshs.2023.06.003
Cite this article: Wang T, Chen J, Schinke R, Zou L. Commentary on "Why people should run after positive affective experiences instead of health benefits". *J Sport Health Sci* 2024;13:451–2.

Another point for consideration is the negative component of "affects" (i.e., negative affective experiences). Affective experience, such as feeling excited or happy when exercising, is a key factor impacting exercise behavior and may motivate us to participate in regular exercise.[2,3] However, of these potential responses, negative affects (e.g., fatigue, pain, and discomfort) are likely to be derived from physical effort, especially among the physically inactive, which cannot be simply included as the cost of PA.[4,5] However, the research in question looks only at positive affective experiences derived from PA, without consideration of negative content. Besides that, the applicable scope of the theory (i.e., targeted population and cross-cultural generalization) can be further explored. Additional empirical studies are needed for confirmation and support.

Equally approvingly, the authors discussed the net difference of SV (PA) − SV (SED), as presented in Eq. (3), to valance the behavior choices. It stands to reason that if the net difference is positive, individuals tend to think PA has a higher SV, and if it is negative then sedentary behaviors are considered more worthwhile. With this in mind, future research can further investigate how SVs impact our behavioral choices in situated decisions. Besides that, other objective factors influencing our behaviors can be considered together with SVs.

In summary, we recognize the contributions this research[1] has made to understanding the vital role positive affective experiences play in PA engagement. The model proposed by the authors partly explains whether and why health benefits have less influence on keeping a person physically active; however, positive affects might also have a greater effect on fostering regular exercise. It is legitimate and logical to seek to understand from a multidisciplinary perspective why people choose to remain physically inactive rather than to participate in PA. Yet the derivation and validity of the choice could be investigated further still—for example, by examining PA under various conditions associated with both positive and negative affective components. Furthermore, studies with different populations, whether divided by nation or within different clinical settings (e.g., elderly people, people with exercise-related cognitive errors[6,7]), are essential to better establish the role of health benefits *vs.* affective experiences on PA and sedentary behavior.

Authors' contributions

TW, JC, RS, and LZ conceived the study and drafted the manuscript. All authors contributed to the improvement of the manuscript and approved its final version. All authors have read and approved the final version of the manuscript, and agree with the order of presentation of the authors.

Competing interests

The authors declare that they have no competing interests.

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