CLIMATE CHANGE PERCEPTIONS, PERSONALITY TRAITS, AND SUSTAINABLE HEALTH BEHAVIOURS IN SINGAPOREAN ADULTS

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Title

Climate Change Perceptions, Personality Traits, and Sustainable Health Behaviours in Singaporean Adults.

Background

Climate change presents an urgent global challenge with far-reaching impacts on both environmental and human systems. Public perceptions of climate change are critical not only for shaping societal support for sustainability policies but also for influencing individual health behaviours such as diet and physical activity. Psychological characteristics, including personality traits and well-being, may further shape how people respond to climate challenges. Understanding these links in local contexts provide valuable insights for integrated approaches to sustainability and health promotion.

Objectives

This study aimed to evaluate key climate change perceptions among Singaporean adults and examine their associations with sociodemographic characteristics, personality traits, psychological well-being, and sustainable health behaviours.

Methodology

Data were drawn from Singaporean adults enrolled in a digital lifestyle improvement trial targeting health behaviours. Participants completed six items assessing climate change perceptions and their impacts, including importance, worry, perceived personal harm, perceived harm to future generations, and interference with physical activity and diet. Items were rated on 4- or 5-point Likert scales (e.g., 1 = "not at all" to 5 = "extremely"). For analysis, responses were dichotomised into "high" (e.g., very/extremely important, very/somewhat worried, great/moderate harm or interference) versus "low" (all other responses). "Don't know" responses were treated as missing. Responses were dichotomised into 'high' versus 'low' categories based on established cut-offs, reflecting meaningful distinctions in perceptions (e.g., very/extremely important vs. less important). This approach facilitated comparability across items and addressed sparse categories in the data. Personality traits were assessed with the Big Five Inventory, dietary behaviours with the DASH (Dietary Approaches to Stop Hypertension) score, physical activity using the Long Form International Physical Activity Questionnaire (IPAQ) and well-being through validated self-report scales (e.g. The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)). Descriptive statistics, Pearson's chi-square tests, and Fisher's exact tests were conducted to identify associations.

Results and Discussion

Of the participants (N = 678; age range = 21–58; mean = 31.11, SD = 9.65), 42.5% were male and 57.5% female, with the majority ethnically Chinese (n = 561, 82.7%). Overall, 31.0% rated climate change as highly important, 64.8% expressed high worry, 70.7% perceived personal harm, and 94.3% perceived harm to future generations. Most reported that climate conditions strongly influenced their physical activity (81.8%) and dietary choices (61.9%). No significant associations were found between perceptions and age, gender, income, or education. However, non-Chinese participants were more likely than Chinese participants to perceive climate change as highly important and worrying. Participants rating climate change as highly important had significantly higher conscientiousness (mean = 6.53 vs 6.04, $p < 0.001$), openness (mean = 6.85 vs 6.26, $p < 0.001$), and adherence to DASH diets (mean = 22.26 vs 21.22, $p = 0.007$), while those with high concern reported greater well-being (mean = 40.20 vs 39.15, $p = 0.03$) and openness (mean = 6.58 vs 6.19, $p = 0.003$). No differences were observed for physical activity across perception groups. These findings suggest that psychological and behavioural factors, rather than demographics, are key drivers of climate perceptions, with dietary behaviours showing the strongest alignment with high climate concern and importance ratings.

Conclusions

Although relatively few Singaporean adults rated climate change as a top priority, a high level of concern was evident—particularly regarding personal and generational harm. This concern was reflected in more sustainable dietary choices and was significantly

associated with traits like conscientiousness and openness. These findings suggest that climate communication efforts could benefit from leveraging personal health and psychological motivators to promote sustainable behaviours in urban populations.