



ELSEVIER

Contents lists available at ScienceDirect

Environmental Research

journal homepage: www.elsevier.com/locate/envres

Review

Population risk perceptions of global warming in Australia

Kingsley Agho^{a,*}, Garry Stevens^a, Mel Taylor^a, Margo Barr^b, Beverley Raphael^a^a School of Medicine, University of Western Sydney, Parramatta Campus, Locked Bag 1797, PENRITH, NSW DC1797, Australia^b Centre for Epidemiology and Research, NSW Department of Health, NSW, Australia

ARTICLE INFO

Article history:

Received 16 September 2009

Received in revised form

10 September 2010

Accepted 16 September 2010

Keywords:

Risk perception

Global warming

Health behaviours

Disaster

Sociodemographic factors

ABSTRACT

Introduction: According to the World Health Organisation (WHO), global warming has the potential to dramatically disrupt some of life's essential requirements for health, water, air and food. Understanding how Australians perceive the risk of global warming is essential for climate change policy and planning. The aim of this study was to determine the prevalence of, and socio-demographic factors associated with, high levels of perceived likelihood that global warming would worsen, concern for self and family and reported behaviour changes.

Methods: A module of questions on global warming was incorporated into the New South Wales Population Health Survey in the second quarter of 2007. This Computer Assisted Telephone Interview (CATI) was completed by a representative sample of 2004 adults. The weighted sample was comparable to the Australian population. Bivariate and multivariate statistical analyses were conducted to examine the socio-demographic and general health factors.

Results: Overall 62.1% perceived that global warming was likely to worsen; 56.3% were very or extremely concerned that they or their family would be directly affected by global warming; and 77.6% stated that they had made some level of change to the way they lived their lives, because of the possibility of global warming. After controlling for confounding factors, multivariate analyses revealed that those with high levels of psychological distress were 2.17 (Adjusted Odds Ratio (AOR)=2.17; CI: 1.16–4.03; $P=0.015$) times more likely to be concerned about global warming than those with low psychological distress levels. Those with a University degree or equivalent and those who lived in urban areas were significantly more likely to think that global warming would worsen compared to those without a University degree or equivalent and those who lived in the rural areas. Females were significantly (AOR=1.69; CI: 1.23–2.33; $P=0.001$) more likely to report they had made changes to the way they lived their lives due to the risk of global warming.

Conclusions: A high proportion of respondents reported that they perceived that global warming would worsen, were concerned that it would affect them and their families and had already made changes in their lives because of it. These findings support a readiness in the population to deal with global warming. Future research and programs are needed to investigate population-level strategies for future action.

Crown Copyright © 2010 Published by Elsevier Inc. All rights reserved.

1. Introduction

Global warming has the potential to dramatically disrupt some of life's essential requirements for health, water, air and food (Horton and McMichael, 2008; WHO, 2008). Failure to respond adequately to global warming and its associated impact on natural resources and human health may result in global costs that could dramatically exceed the costs of prevention (Bazerman, 2006).

In Australia, global warming is regarded as the most salient environmental issue and is believed to have contributed to

Australia's worst drought in 2002 (Karoly et al., 2003; Garnaut, 2008). Despite extensive media coverage of the risk of global warming in Australia, informing and educating the public as to the scope of these potential impacts remains a considerable challenge (Lorenzoni and Pidgeon, 2006; Weber, 2007; Malka et al., 2009). Hence, an understanding of how people perceive the long term risk of global warming may assist community consensus building and contribute to planning, research and policy on climate change (Kempton et al., 1995).

Past studies have indicated that, after controlling for potentially confounding factors: female gender, younger age group and higher education are factors associated with significantly higher perceived risk of global warming (Alhakami and Slovic, 1994; Krosnick et al., 2006; Semenza et al., 2008). Similarly those who thought that their local temperatures had increased recently were significantly more likely to perceive this as being related to global

* Corresponding author. Fax: +61 2 9685 9554.

E-mail addresses: k.gho@uws.edu.au (K. Agho), g.stevens@uws.edu.au (G. Stevens), melanie.taylor@uws.edu.au (M. Taylor), meyes@doh.health.nsw.gov.au (M. Barr), b.raphael@uws.edu.au (B. Raphael).

warming and may support government policies intended to ameliorate the problem (Krosnick et al., 2006; HSBC, 2007; IPCC, 2007). Importantly, the threat perception of global warming can significantly influence public perceptions on the risk and dangers of global climate change, because people who perceive high risk of an adverse event are more likely to support initiatives addressing global warming (O'Connor et al., 1999).

The research contribution this paper makes is twofold: first, to present population-based prevalence data regarding the perceived risk of global warming and second, to determine factors associated with high perceived risk of global warming in Australia.

2. Methods

From April to June 2007, a module of three global warming questions (see Table 2) were inserted into the New South Wales Population Health Survey, a continuous telephone survey of the health behaviours status and access to health services of the state population, using the in-house CATI facility of the New South Wales (NSW), Department of Health (Barr, et al., 2008a). Up to 7 calls were made to establish initial contact with a household, and 5 calls were made in order to contact a selected respondent. Only residential phone numbers were used in the sample, as residential phone coverage in Australia still remains high, at 85%; compared to 15% with no landline (Australian Communications and Media Authority, 2009).

The global warming survey questions were approved by ethics committees of both the University of Western Sydney and New South Wales Department of Health.

The survey also includes specific items relating to health status, including psychological distress (using the Kessler K10); scores range 10–50, with ≥ 22 considered 'high' psychological distress (Kessler and Mroczek, 1994) and self-rated health status, and other factors such as location (urban/rural) and respondent demographics, which were all incorporated into the current analysis. The target population for the survey is all adult state residents, living in households with private telephones.

All responses were coded on a five-point Likert-scale. That is, 'not at all likely,' 'a little likely,' 'moderately likely,' 'very likely' and 'extremely likely'. The definitions of global warming likely to worsen, concern for self/family and changed way of living indicators used in this study were as follows:

- *Global warming likely*: proportion of respondents who thought it was 'extremely' or 'very' likely that global warming will worsen in Australia.
- *Concern for self/family*: proportion of respondents who would be 'extremely' or 'very' concerned that they or a family member would be directly affected if global warming were to worsen in Australia.
- *Changed way of living*: proportion of respondents who had changed the way they live their lives 'a little,' 'moderately,' 'extremely' or 'very' because of the possibility of global warming.

In addition, two combined indicators were included in the analysis. These were used to enable an analysis of sub-populations with higher threat sensitivity, and this approach is consistent with the factor structure of most threat perception models (Brewer et al., 2007). The two combined indicators were as follows:

- *Combined indicator (1)*: global warming likely+concern for self/family

- *Combined indicator (2)*: global warming likely+concern for self/family+changed way of living.

The kappa and weighted values for the global warming questions range 0.51–0.60 for the first field test and from 0.35 to 0.50 for the second field test. The overall test–retest reliability for the global warming questions was acceptable.

The survey data were weighted to adjust for the probability of selection and for differing non-response rates among males and females and different age groups (Steel, 2008). Data were manipulated and analyzed, using SAS version 9.2 (Barr et al., 2008a). The SURVEYFREQ procedure in an SAS was used to analyze the data and calculate point estimates and 95% confidence intervals for the prevalence estimates.

To identify the factors significantly associated with threat perceptions for global warming, bivariate and multiple survey logistic regression analyses were conducted, using a stepwise backwards model and the "SVY" commands of Stata version 9.2 (Stata Corp., College Station, TX, US), which allowed for adjustments for sampling weights. All variables with statistical significance of $p \leq 0.05$ were retained in the final model.

3. Results

A total of 2004 state residents aged 16 years and over completed the module on global warming. The overall response rate was 63.8%. The demographic profile of the weighted survey population was comparable with the Australian Bureau of Statistics (ABS) (2006) Census (ABS, 2006) and these comparisons are reported elsewhere (Barr et al., 2008b).

Table 1 shows the responses to each question, including do not know and refused. The percentage of do not know or refused responses was low.

Table 2 shows the prevalence estimates for the indicators for global warming likely, concern for self/family and changed way of living by sex, age group, demographic characteristics, and the indicators of level of psychological distress and general self-rated health status. Overall 62.1% of the population thought global warming was likely to worsen, 56.3% were concerned for

Table 1
Prevalence estimates and 95% CI for response category for each question, including do not know and refused.

Question	Response	% (95 CI)
How likely do you think it is that the effects of global warming will worsen in Australia?	Not at all	3.5 (2.5, 4.5)
	A little	10.2 (8.4, 12.1)
	Moderately	21.9 (19.3, 24.4)
	Very	28.8 (26.0, 31.6)
	Extremely	29.4 (26.5, 32.4)
	Do not know	5.6 (4.4, 6.9)
If global warming were to worsen in Australia, how concerned would you be that you or your family would be directly affected by it?	Refused	0.6 (0.1, 1.1)
	Not at all	6.0 (4.6, 7.4)
	A little	12.6 (10.5, 14.7)
	Moderately	23.4 (20.9, 26.0)
	Very	35.7 (32.7, 38.8)
	Extremely	18.4 (16.0, 20.9)
How much have you changed the way you live your life because of the possibility of worsening global warming?	Do not know	3.1 (2.1, 4.2)
	Refused	0.7 (0.2, 1.2)
	Not at all	21.7 (19.2, 24.2)
	A little	25.6 (22.8, 28.3)
	Moderately	32.3 (29.4, 35.2)
	Very	15.0 (12.6, 17.5)
	Extremely	2.3 (1.5, 3.2)
	Don't know	2.1 (1.4, 2.9)
	Refused	0.9 (0.4, 1.5)

Download English Version:

<https://daneshyari.com/en/article/4470073>

Download Persian Version:

<https://daneshyari.com/article/4470073>

[Daneshyari.com](https://daneshyari.com)