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## Introduction

- Climate change is resulting in deteriorating health care outcomes globally
- Persons living with chronic conditions face heightened risk to their health from climate change impacts
- It is important for individuals, health care providers (HCPs), and decision/policymakers to be aware of these impacts to ensure the best quality of care

**Objective: Synthesize current understanding on the knowledge, perceptions, and attitudes about climate change impacts on health outcomes of Canadian HCPs and patients with chronic conditions.**

## Methods

Scoping review search was carried out to identify published studies with the following criteria:

- Knowledge, perceptions and/ or attitudes of any Canadian HCPs and/ or Canadian patients living with a chronic condition
- Must connect climate change directly to knowledge, perceptions and/ or attitudes of chronic disease(s)
- Any language
- Published between January 2010 and June 2024

Databases MEDLINE, EMBASE, PsycINFO, were searched.

Studies were included or excluded based on criteria.

Two reviewers were independently responsible for data screening and extraction.

## Results

- 5,948 citations were screened and only **3 studies** met the inclusion criteria
- All 3 studies focused on knowledge, perceptions, and attitudes of HCP's
- Two studies were international cross-sectional studies and included Canadians while one was conducted in Canada only.
- A study examined the knowledge and attitudes of HCPs regarding the link between climate change and kidney health
- A study stratified results on income level of country highlighting disparities among high and low-income countries

Table 1: Perception and Attitude's of Healthcare Providers

**Q:** n (%) selecting scores of 4 or 5 when participants were asked "On a scale of 1–5, where 1 is not concerned at all and 5 is very concerned, how concerned are you that climate change will harm the health of?"  
**A:** People on dialysis: 68%  
People on PD: 63%  
People with CKD (not on dialysis): 64%  
People with kidney transplant: 64%  
Kidney health of the general population: 67%

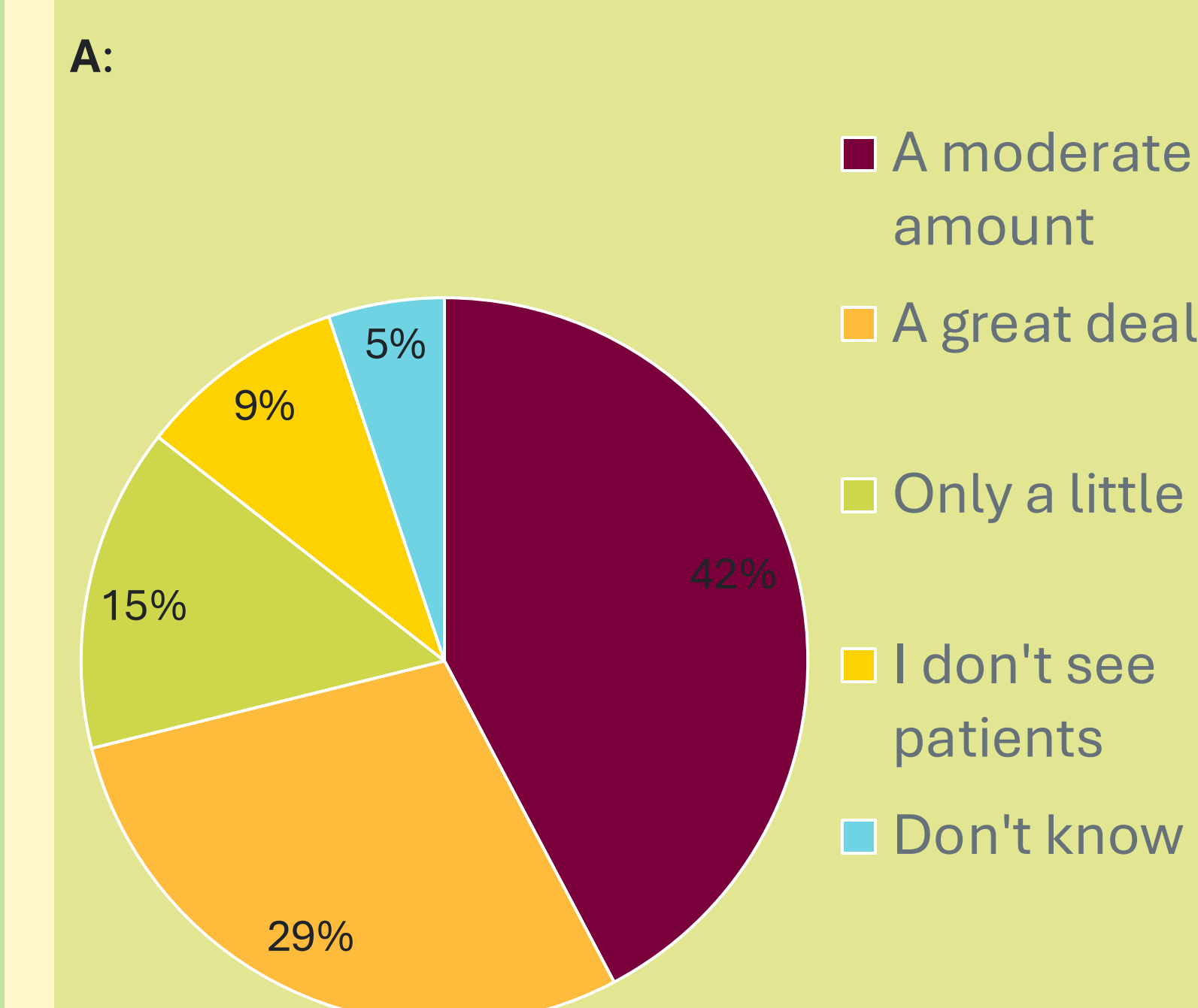
High-Income Country vs. LMIC:  
People on hemodialysis: 70% vs. 70%  
People on PD: 66% vs. 62%  
People with CKD (not on dialysis): 62% vs. 68%  
People with kidney transplant: 62% vs. 67%  
Kidney health of the general population: 66% vs. 70%

**Q:** To what extent is climate change a risk to the health of Canadians?  
**A:** Public vs experts: 2.77 (0.92), 2.41 (0.85)\*

**Q:** What level of uncertainty do you think there is, in general, about climate change risks?  
**A:** Public vs. experts: 2.75 (0.92), 3.15 (0.89)\*

**Q:** How much personal control do you feel you have over climate change risks?  
**A:** Public vs experts: 1.80 (1.00), 1.59 (0.78)\*

**Q:** How much do you think climate change is affecting the health of your patients?



**Q:** % who will be affected  
**A:** People with chronic disease: 76%  
Poor and working poor: 64%  
Young children (0-4): 71%  
Adults over 60: 70%

**Q:** How much do you worry about climate change risks?  
**A:** Public vs. experts: 2.17 (1.08), 2.01 (0.89)

**Q:** What level of risk from climate change do you think is acceptable?  
**A:** Public vs experts: 2.14 (0.84), 1.92 (0.62)\*

Table 2: Knowledge of Healthcare Providers

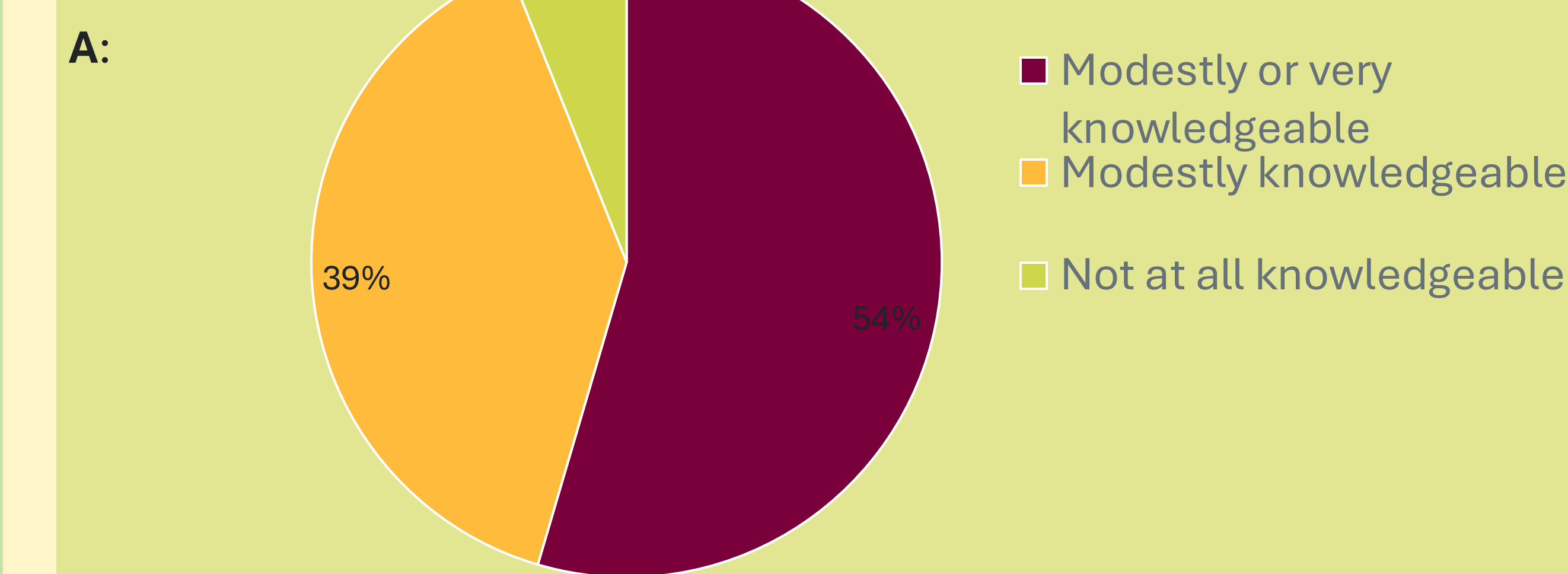
**Q:** n (%) responding "yes" to "Do you think you possess sufficient knowledge on the health effects of climate change for?"

**A:** People on hemodialysis: 47%  
People on PD: 42%  
People with CKD (not on dialysis): 49%  
People with kidney transplant: 41%  
Kidney health of the general population: 40%

Participants from UMICs, LMICs, and low-income countries rated their knowledge significantly higher than those from high-income countries

**Q:** How much knowledge do you feel you have about climate change risks?  
**A:** Public vs. experts: 2.70 (0.89) vs. 2.65(0.79)

**Q:** % overall knowledge about association between climate change and health



**Q:** Identify barriers to addressing climate change– related health issues with patients  
**A:** 45% indicated lack of knowledge about how to address the issue with their patients.

## Discussions

- While **concern** about climate change's impact on patient health showed **mixed results** across studies
- There was a **consistent and high level of understanding** that climate change **negatively** affects patients with chronic conditions
- Knowledge** of climate change among HCPs was also **mixed**, with two out of three studies reporting that less than half of participants felt adequately informed to support patients



## Take Home Messages

There are evident gaps in Canadian literature, a need to **increase resources** for HCPs, and **future research** can be conducted to assess patients' perspectives on climate change and their chronic conditions.