

Cold and costly

Renter Researchers' Experiences of Winter 22

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Better Renting is a community of renters working together for stable, affordable, and healthy homes. Find out more about Better Renting at www.betterrenting.org.au

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Executive summary

Australian homes are not built to cope with winter cold. As a result, indoor temperatures in winter are often lower than in much colder countries that are better at weatherproofing, insulating, and heating their homes. This indoor cold contributes to higher energy costs, poorer respiratory and cardiovascular health, and adverse mental health impacts.

Renters are particularly affected by this. People who rent are unable to make modifications that would make it easier and cheaper to have a warm home in winter. Thus rental properties tend to have worse energy performance, and renters spend more on energy than equivalent owners. People who rent typically have lower incomes, so energy costs are a greater proportion of their income, and cost concerns prevent many people from using heating.

This report documents our project, 'Winter Renter Researchers', which sought to explore these phenomena. We recruited over 70 renters from across Australia to track the winter temperatures in their homes using smart thermometers that track temperature and humidity at one-minute intervals. Participants also contributed qualitative data through surveys, phone interviews, webinars, and digital chat groups.

The findings from this research are startling. The WHO recommends 18°C as the minimum healthy indoor temperature. Yet across Researchers' homes, temperatures were below this minimum 75% of the time, or just over 18 hours a day. Through the recording period of July 13 to July 31, there were entire days where a Researcher's recorded temperature never once went above 18°C: this happened 40.3% of the time, or about 19 of 49 days. On 21 July, a Researcher in Tasmania recorded an indoor temperature of 0.2°C.

In known cold regions like Tasmania and the ACT, the average minimum temperatures were 7.5°C and 7.4°C respectively, with average *overall* temperatures still well below 18°C: 13.9°C and 14.2°C. Even in warmer areas like Victoria and NSW we see surprisingly low temperatures. The average temperature in both Victoria and NSW through this period was 15.4°C. Minimum temperatures were 9.8°C and 10.5°C.

Some stand-out findings from these figures are:

• **NSW** had the highest average humidity of any jurisdiction, with 83% of recordings above 60% relative humidity, and over half of recordings above 70% relative humidity. These high humidity values explain the ongoing mould problems found in many NSW rental homes.

- Victoria offers a comparison of a rental and an owner-occupier home in the same suburb. The owner spends around \$2 a day on energy and their home is typically around 17-20°C. The renter has a home that oscillates from 13 to 18°C, rarely exceeding a healthy minimum temperature. They spend \$6-10 a day on energy.
- Tasmania had the greatest proportion of time below 18°C, 91.0%. This is over 21 hours per day below the WHO recommended minimum healthy temperature. Tasmania also had the highest rate of entire days below 18°C: 61.5%.
- ACT had the lowest average minimum temperature of any jurisdiction, 7.4°C. Although Tasmania spent more time in cold temperatures, on average ACT got colder indoors than anywhere else. ACT had the second highest amount of time below 18°C, 88.3%, or over 21 hours a day.
- SA had the second-highest rate of relative humidity above 70%: in SA rentals, this occurred 43.3% of the time. This is surprisingly high given SA's relative warmth.
- **NT** has striking variety. Darwin has relatively salubrious temperatures and humidity. Alice Springs, on the other hand, had an average minimum temperature of 7.1°C and 89.5% of temperature recordings below 18°C.

State/territory	Researchers	Time below 18℃ (%)	Days below 18°C (%)	Avg. Min. Temp. (°C)
NSW	16	85.1	55	10.5
Vic.	10	80.2	40	9.8
SA	12	79.2	41.2	12.0
WA	12	56.5	17.5	12.9
Tas.	8	91	61.5	7.5
Qld	4	28.6	0.5	14.8
ACT	8	88.3	49	7.4
NT	4	46.6	29.1	13.7
Australia	74	75.1	40.3	10.8

From interviews and survey data we uncovered themes that tracker data alone didn't reveal. Most salient is the dilemma between heating to an adequate temperature or avoiding unaffordable energy bills. Virtually every Researcher grappled with this in some way: roughly half our participants would heat their homes and grit their teeth in anticipation of a huge bill; others would try to endure a frigid home rather than risk energy debt.

But this doesn't do justice to the problem. What emerges through our research is that many renters don't choose between a cold home and expensive bills: they end up dealing with both. Many of the homes in this study were so substandard that even when people chose to run their costly, inefficient heaters, they were still unable to get warm. Rather than opting for the less bad option, it was normal for people to end up with the worst of both worlds: low temperatures and high costs.

There is a related mental health dimension to this. Many people described a feeling of panic or anxiety related to energy costs, or a feeling of depression and isolation related to a cold home (especially where the cold interfered with social engagement, such as within families or between friends). Mould also contributed to this, with the growth of visible spores gnawing at mental wellbeing even as it eroded physical health. This reveals that the mental health burden of a substandard cold home is inescapable for renters: your mental health suffers because you or cold, or it suffers because you are cold *and* you are worried about energy bills.

Let us stress then: absolutely none of this is inevitable. It is possible to have homes that are warm and dry in winter, keeping their occupants healthy and well. Such homes need not be restricted to well-off owners, but can in fact be a birthright of every person. Through minimum standards to drive retrofits of existing rental housing, and higher standards for new dwellings, we can transition our housing stock to require less energy, cause less climate pollution, be healthier to live in, and, perhaps most importantly, provide the decent liveable homes that are the foundation of a good life.

As such, our research points to the growing need for minimum energy efficiency standards for rental properties, helping to ensure that basic measures like ceiling insulation and efficient heaters are standard throughout the rental sector. Issues around energy costs and fuel poverty will partly be addressed through improved household energy efficiency, but there is also a glaring need to bolster the incomes of low-income households. Increases to income support payments and Commonwealth Rent Assistance would do much to give people the resources necessary to adequately heat their homes in winter. Strengthening tenant protections will help tenants to ensure that their homes are maintained to a decent standard, and that exorbitant rents don't force people into fuel poverty.

How is it that, as a country, we have accepted a situation where so many of us live in substandard homes? People are forced to bunker down every winter, shivering for months in hostile homes that make us sick. While outdoor cold may be a fact of life in winter, indoor cold is a human creation, established through policy (in)decisions. Fundamentally, this is something that can be changed — if we choose to change it.

Introduction

Australian homes get very cold in winter. This is a common trend in mild-climate countries: facing milder winters, we are less compelled to insulate and heat our homes, which ironically results in indoor temperatures lower than in much colder countries. Research bears this out: Australian homes are generally less energy-efficient than homes in the USA, Canada, and the UK¹; a European study found that decreasing temperatures increased mortality more dramatically in regions with *milder* winters.²

People in rental properties bear the greater burden of this. When an owner-occupier experiences a cold home, they have the motive and the opportunity to address the situation and reap the benefits. When a renter experiences a cold home, they are reliant upon a disinterested third party to make the sort of structural changes necessary to bring a home up to standard. Generally, renters are reluctant to make such requests and, when they do, results are discouraging. Survey data shows many more renters than owner-occupiers reporting uncomfortable home temperatures renters spend about 8% more on energy than equivalent owner-occupier households, an outcome attributed to the standard of the housing stock itself. 5,6

These cold homes impose a burden. Part of this is physical health consequences. Exposure to cold causes blood vessels to constrict and retreat from the skin surface. The heart has to do more work to push blood through such vessels, increasing blood pressure. This leads to a pattern of increased rates of cardiovascular disease every winter. A Scotland study found that the risk of high blood pressure was two times higher below 18°C, and four times higher below 16°C.⁷ An Australian study found that eliminating cold in Australian homes could lower rates of heart disease, securing an extra 1.6 health adjusted life years per 1000 persons.⁸

Winter cold also worsens respiratory disease,⁹ and contributes to worse mental health.¹⁰ Overall, about one in fifteen deaths in Australia is attributable to winter cold — more people die from cold in Australia than in Sweden.¹¹ Research suggests that 30-50% of excess winter mortality is linked to the standard of housing.¹²

What then, is a healthy indoor temperature in Winter? According to the World Health Organization's *Housing and Health Guidelines*, "indoor housing temperatures should be high enough to protect residents from the harmful health effects of cold." They go on to advise:

"For countries with temperate or colder climates, 18 °C has been proposed as a safe and well-balanced indoor temperature to protect the health of general populations during cold seasons." ¹³

The American Society of Heating, Refrigerating and Air-Conditioning Engineers makes similar recommendations, advising a minimum winter temperature of 20°C (68.5°F), and a maximum relative humidity of 65%. ¹⁴ Similarly, Public Health England recommends maintaining a home temperature to at least 18°C to avoid health risks. ¹⁵ The 18°C figure is a widely accepted and supported threshold for assessing the appropriateness of indoor temperatures. Note, however, that this applies to general populations: people who are more at risk, for example with pre-existing health conditions, may still be vulnerable at such temperatures and would likely need warmer dwellings.

Another problem with cold is the related issues of condensation, mould, and damp. Warm air can carry more moisture than colder air, so when air gets colder its relative humidity increases. (That is, it may be holding the same amount of moisture, but it is holder a higher amount relative to what it is capable of containing.) Condensation occurs when relatively warm air comes into contact with a cool surface and the moisture in the air condenses into liquid form, because the air temperature has decreased. This is commonly observed on single-glazed windows during winter, although it can happen elsewhere in a home. A humid home environment leads to mould development and can also encourage allergens that affect respiratory health. Maintaining relative humidity below 70% helps to avoid condensation and mould. More generally, 40-60% is considered a healthy range for optimum health outcomes. Higher humidity also makes cold air feel even colder.

Given the well-document issues around Australian housing in general and rental housing in particular, and the potential impacts of this on human health, we were interested in measuring temperature and humidity in a sample of rental homes and understanding how this was affected by dwelling quality, and how it affected, in turn, the occupants of these homes.

Method

For this research, we were interested in better understanding the experiences of renters through winter and how this related to the conditions in their home. This included building an evidence base for the temperature and humidity within rental homes, and growing an evidence base for how this affects people who rent. We were also interested in the role that dwelling standards play and how this could limit exposure to undesirable temperatures or humidity levels.

In May 2022 we opened applications for renters to become Renter Researchers. To assist with our research, the application process included questions on applicants' homes and energy efficiency features. We recruited through our own community networks and social media, assisted by other organisations. In total we received 211 applications. We selected applicants to achieve a diverse sample of renters' experiences, covering different geographies, economic situations, and housing types. We invited 102 applicants to be Researchers but, after attrition, we ended up with 75 Researchers who commenced the program, including temperature tracking and regularly sharing temperature data.

The geographical spread of Researchers is shown in the table and figure below.

State/territory	Capital city	Elsewhere	Total
NSW	8	8	16
Vic.	9	1	10
SA	10	2	12
WA	8	4	12
Tas.	8	1	9
Qld	3	1	4
ACT	8	0	8
NT	2	2	4
Australia	56	19	75



Figure 1: The distribution of Renter Researchers across Australia.

Each Researcher had a Govee H5075 device capable of tracking temperature and humidity at one-minute intervals. Researchers were asked to position the tracker in their home wherever the cold was most relevant to them, placed so as to obtain an accurate sense of the ambient temperature, away from direct sunlight or the airstream of a heater. Some researchers also received a HOBO MX2201 outdoor tracker to allow comparison between indoor and outdoor temperatures. Researchers synced tracker data every two weeks, with data recording beginning from Monday 13 June and running for seven weeks through to Sunday 31 July. In total we received 75 individual datasets, with an average completeness of 94.8%. One dataset was excluded from quantitative analysis as the Researcher was experiencing homelessness and not in a rental dwelling during the study period.

In addition to quantitative data from trackers, we sourced qualitative data from participants. This involved:

- Two participant surveys, one each at the end of June and July;
- Phone interviews with a small number of individual participants; and
- An ongoing discussion carried out in various WhatsApp groups.

These qualitative inputs helped us to make sense of the temperature data and better understand the consequences and impacts of the temperatures we were seeing. Quotations in this report are derived from these sources.

As a final input, we recruited four owner-occupiers of energy efficient homes to provide data on their indoor temperatures. These homes are typically highly insulated and well sealed with use of passive design and efficient heating appliances. We were interested to compare how temperatures inside these homes would compare with temperatures in nearby rental homes when facing the same outdoor conditions.

Quantitative findings

As noted in the introduction, the WHO recommends 18°C as the minimum healthy indoor temperature. For each state/territory, the below table shows a summary of temperature data: the proportion of recordings where the temperature was below 18°C; the percentage of Researchers who recorded temperatures below 18°C at least 90% of the time; and the average minimum temperature recorded. Within NT, we have separated Darwin and Alice Springs to reveal the contrast.

State/territory	Time below 18℃ (%)	% of Researchers below 18°C at least 90% of the time	Avg. Min. Temp. (°C)
NSW	85.1	50	10.5
Vic.	80.2	50	9.8
SA	79.2	50	12.0
WA	56.5	8	12.9
Tas.	91	50	7.5
Qld	28.6	0	14.8
ACT	88.3	38	7.4
NT (Darwin)	0	0	20.2
NT (0870)	89.5	50	7.1
Australia	75.1	38	10.8

Alongside temperature, relative humidity (RH) also has implications for human health. The healthiest RH range is 40-60%. RH above 70% encourages condensation and thus dampness and mould. The below table shows time in different RH ranges.

State/territory	Avg. RH (%)	Time above 60% RH (%)	Time above 70% RH (%)
NSW	70.3	82.8	53.4
Vic.	66.2	65.4	35.2
SA	67.6	77.8	43.3
WA	66.8	78	38.6
Tas.	67.9	78.2	43
Qld	65.6	59.2	33.3
ACT	59.2	42	16.1
NT (Darwin)	53	45.6	15.7
NT (0870)	42	0.1	0
Australia	65.9	69.3	38.2

Comparing owners and renters

0.00

Source: Better Renting • Created with Datawrapper

To compare housing performance, we also sourced data from three owners of energy efficient homes in Sydney. This allowed us to compare the performance of efficient homes with nearby rental properties. Although we don't compare with outdoor temperature, these properties are typically located within a 6km radius of Ashfield, and thus subject to a similar climate.

Group	Avg. Temp. (°C)	Time below 18°C (%)	Average RH (%)
Sydney renters (n=5)	16.2	83.9	68.9
Sydney owners (n=3)	21.2	2	47.2

These owners have renovated their homes with energy efficiency features in a way that is not possible for renters. These homes are about 4 degrees warmer on average and relative humidity is typically within the healthy range. More importantly, the owners spend a negligible portion of time in unhealthy temperature ranges, while renters' homes were below 18°C forty times more frequently.

Inefficient rentals and efficient owned homes, Sydney

21°C 20.5 20 19.5 19 18.5 18 WHO recommended minimum 17 16.5 16

Figure 2: Comparing indoor temperatures at different times of day, owners and renters in Sydney.

15:00

18:00

12:00

21:00

9:00

The above figure shows this comparison visually, over time. This shows an 'average' day for the owners compared with the renters, aggregating temperatures across all recorded days for each 15 minute interval. A number of trends are apparent. Firstly, renters are consistently colder by about 4°C. Secondly, the rental temperatures decrease faster overnight and then increase slower during the day. Many efficient dwellings will make better use of passive solar heating, and we can see this in this chart. A third stark point is that the average temperature in rental homes, even during key

periods when people are home, remains below the WHO recommended minimum of 18° C. In contrast, owners of efficient homes do not experience such temperature depths.

In Melbourne, we were able to compare indoor temperature from a rental home and an energy-efficient owned property in the same suburb. Although we compare only two individual dwellings, the pattern gives us a sense of how the experience of a renter differs from that of an owner.

Average temperature through the day, owner vs renter, Melbourne 20°C 19 18 WHO recommendation Renter 15 14 13 0:00:00 3:00:00 6:00:00 9:00:00 12:00:00 15:00:00 18:00:00 21:00:00 Source: Better Renting • Created with Datawrapper

Figure 3: Comparing temperatures for owner-occupier vs renter in a Melbourne suburb.

The owned home has passive solar design, rooftop solar, excellent insulation, and efficient electric heating. We can see the benefits of this: temperatures are consistently over 18°C, with a dip of less than one degree overnight when people are under layers of blankets. The home has minimal temperature loss overnight and the passive solar design means the house benefits from sunlight to warm in daytime hours. The temperature range on an average day is about 3°C. With the benefit of rooftop solar, this household spends about \$2 a day on energy.

In contrast, the rental home is south-facing, with reasonable ceiling insulation, no underfloor insulation, bubble-wrap on windows, and ducted gas heating. It can be draughty overnight. This home is below 18°C most of the time, except in the evenings when it nudges above the threshold with the benefit of heating. The temperature drops rapidly overnight, losing about 5°C in 7 hours. The temperature range during the day is about 6°C. This household spends about \$6-10 per day on energy, and yet they are consistently colder than in the efficient owner-occupied household.

Qualitative findings

While the quantitative data allows us to get a numerical sense of the cold and humidity facing people who rent, and how this compares to people in other housing, it lacks a human dimension. Through surveys, interviews, and an ongoing dialogue with the community of Researchers, we have identified key themes that typify the experiences of renters in this cohort. This themes, which will be explored below, are:

- Low-quality housing that is cold, even when heated;
- An unending struggle against mould and damp;
- The impact of energy costs on behaviour and wellbeing; and
- The effect of substandard housing on physical and mental health.

"...cold seeps in through the floorboards"

Researchers shared harrowing stories of just how cold it got in their houses in winter and how this affected them. Commonly, they were able to identify issues with the dwelling that caused this. What is surprising, however, is the extent to which using heaters did not help: people could use heating to take the edge off the cold but rarely to actually attain a warm or comfortable home.

The most common housing issues were a lack of insulation, draughtiness, and heat-loss through naked windows. Ceiling insulation in particular is a concern, as up to a third of winter heat loss is through the ceiling. A lack of insulation makes it harder to increase a temperature through heating, and means that warmth is lost more rapidly when heating ceases. While a lack of insulation contributes to heat loss, draughtiness gets rid of heat much more quickly: warm air literally flows out of the building, pulling cold air in from the outside. Naked windows, "an energy efficiency disaster" are another escape route for heat, and also contribute to condensation and thus mould and damp.

"My house is like a tent. It's an uninsulated 50s shack that's pretty run down, and it leaks air like nobody's business."

"Our home is built in the 1980s so it has no insulation in the walls or floor and has lots of leaky, aluminum framed single glazed windows.

Due to these housing issues, people experienced unbearably cold homes and went to extraordinary lengths to stay warm. This included dressing up as if to go skiing just to use the kitchen, or even to sleep. Some Researchers would run a gas stove in an attempt to heat the air, or use the oven solely for this purpose. One Researcher made a point of building their calf muscles to improve their circulation in an attempt to keep their feet warm. Multiple researchers reported the Dickensian experience of suffering chilblains due to their cold home.

"I wear multiple layers of thermal underwear. I'm still cold. My skin still burns."

"We call the back part of the house 'Siberia'....My hands go numb from cold when trying to scrub mould in Siberia..."

Finally, a common experience was that it was not possible to heat the home to a comfortable, healthy temperature. Typically heating was used to 'take the edge off' the cold: not to achieve warmth as such, but to reduce frigidity somewhat. It thus emerged that renters are not choosing between high power bills and a cold home. In fact, many renters are trapped with the worst of both worlds: facing high power bills to run heaters, while still left shivering in a too-cold dwelling.

"We run a tower heater every day in the lounge only....It takes the edge off the cold but we're never really warm"

"There is a gas heater in the living room but it only takes the chill off the living room whilst it's on - as soon as you switch it off, the temperature decreases and within half an hour it's back to the original 10-ish degrees."

However, the experiences of one renter show how readily these issues can be tackled. During the course of the study, a Researcher in Melbourne had an old gas heater replaced with a more modern and efficient unit. They thus experienced a period with an old heater, the in-between period, and then access to a superior unit. They reflected that the improved efficiency meant they could finally attain reasonable temperatures in their homes, while at the same time using less energy to do so: "It's made the house so much more liveable." This change, likely prompted by Victoria's rental standards, shows the effect that regulations can have on improving liveability and reducing energy costs in rental homes.

"...furry mould has grown on all concrete areas"

It is possible to have homes that remain warm, dry, and mould-free all winter. However, when indoor air is colder it cannot carry as much moisture, so condensation and damp become more likely, leading to mould problems. As noted above, condensation and mould become greater risks above 70% relative humidity, and Researchers recorded RH over 70% about two fifths of the time, or over 9 hours per day.

Mould causes many problems. In extreme cases, it can undermine the structure and safety of a dwelling, or have debilitating effects on health. Even in less extreme cases, it can ruin possessions including furniture, clothing, and even record collections. It worsens asthma.

But Researchers primarily experienced mould as a psychological burden. This is partly the effect on one's dignity and self-image when forced to live in a mouldy home, as well as the never-ending struggle to keep mould at bay. This struggle is compounded by patronising memoranda from real estate agencies — increasingly, another feature of the winter experience — offering pat advice on how to clean mould. Although mould is caused by housing quality issues, lessors typically push responsibility onto tenants, insisting for example that windows must be left open, even through freezing winters.

"Mould grows in the bathroom and in any bedroom that is slept in. I have found it growing out of the damp walls, and I have had to throw away possessions because of it. The worst experience has been coughing up blood because of mould growing in my pillowcase."

"Using vinegar to fight the mould everywhere, especially in the bathroom. Condensation in the windows is constant as well."

"Mould in the unsealed sunroom and toilet (no ceiling). Mould in the bathroom (mechanical ventilation does not leave roof space). Mould on window sills. Mould most likely behind upholstered furniture (I'd rather not know at this point)."

Changes that make a home warmer, such as ceiling insulation, or proper ventilation like exhaust fans in bathrooms, can contribute to mitigating mould growth.

"I know the bill will hurt but what can we do?"

The concept of 'fuel poverty', well understood in the UK, is less familiar to Australian audiences. But the reality of fuel poverty is very familiar for many renters. Fuel poverty captures the experience of being unable to afford to keep warm. This can mean huge power bills as a consequence of winter heating, or a poverty of warmth that results from energy rationing in an attempt to avoid bills. Fuel poverty is more likely when someone is in an inefficient home that gets colder and is harder to heat. It is also worsened by inadequate incomes and increasing energy costs — the latter a particular challenge this winter.

The voices of our Researchers capture the breadth of this experience. People spoke matter-of-factly about energy debt, or of cutting back expenditure on food or clothing in an attempt to make ends meet. A number of people living on income support payments found it virtually impossible to cover the increased energy costs during winter, particularly in inefficient rental homes. Others simply accepted that the price of avoiding an unaffordable energy bill was enduring months in a glacial home.

"We burn tissues, pages of old books, shoe boxes for kindling. We eat two meals a day."

"I have to reduce groceries to pay the electricity and gas bill. We share 1 chicken breast between 3 people (9, 11, adult) and my kids are really thin."

"I simply don't get to have luxuries because all my money and energy is spent trying to cover my basic needs."

These are remarkable accounts to hear from people living in one of the wealthiest countries in the world. What is inescapable is that the problem here is more than just substandard homes. In many cases, there simply isn't enough money coming into the household to cover regular household expenses, with people living in a constant state of privation. What is also remarkable is the dignity and resilience that people continue to maintain despite such abject circumstances.

"...a cough I can't shake..."

The combination of cold temperatures, inadequate housing, and high energy costs, takes a toll on renters' health in winter. This affects both physical and mental health.

The lack of energy efficiency standards for rentals is imposing a health cost on people who rent. One example of this is a weaker immune system. Many Researchers described getting sick more often and taking longer to recover from sickness, affecting both them and other members of their household. People also described worse respiratory health. This was particularly bad for those with asthma, with cold air being a known trigger for asthma symptoms. A large number of people in Australia also live with chronic health conditions, and in many cases these can make winter particularly challenging: Researchers referred to pain or discomfort from Raynaud's syndrome, fibromyalgia, and arthritis, amongst other conditions. Pressure on household budgets also meant that some people cut back on medication costs.

"Every tiny headcold etc. I've caught has evolved into full-on bronchitis thanks to the lack of heating in this room....I've had to go to a doctor and get a stronger inhaler just to get through everyday coughs and colds."

"It's getting down to 12c in our bedroom. It's so cold I'm waking up coughing and wheezing with a sore throat from breathing in cold air all night."

"I have asthma, arthritis and fibromyalgia. I am affected by the cold weather constantly and can feel it in my joints and wheeze all the time."

Mental health is another casualty of a cold home. Past research shows clear linkages between home temperatures and mental health: when room temperatures are higher, there is a reduced likelihood of depression and anxiety. ^{10,24} We found that there were two strands to this phenomenon. One is the direct experience of living in chronic cold: people feel alienated from their own home and unable to socialise or even just function. Motivation to do basic household things becomes unattainable. The other dimension is anxiety around energy consumption: people feel ambivalent whenever they use the heater, worried about the cost of energy and the threat of an upcoming bill.

"The constant worry about bills takes a big toll on my mental health."

"Being cold makes me feel pathetic and Dickensian. It makes me feel poor and precarious. I spend a lot of mental energy being anxious about power bills.

"I hate my house and it's really depressing being here, and also having people over."

A 2011 systematic review of different health-related housing interventions found that "warmth and energy efficiency interventions seemed to have the clearest positive impacts on health." This is consistent with the anecdotal experience of our Researchers: different people spoke about either moving to a better home, or having repairs made to their existing home, and experiencing rapid health benefits. The silver lining to our current predicament is that fixing substandard housing can achieve rapid and positive health benefits.

Recommendations

People with cold homes face awful situations: feeling sicker, feeling sadder, and going into energy debt for the privilege. While this reality is awful, we should be heartened by the fact that this problem is eminently solvable. As some researchers have noted:

"...cold housing in Australia is a product – not inevitable, but a consequence of historical and societal processes – of how housing is provided in this nation....Australia as a nation has produced – over multiple generations – housing that is cold in winter and potentially harmful to health." ²⁶

The poor-quality of our housing stock is not an inevitability but the outcome of policy neglect: we caused this problem and we can solve it.

Conceptually, the problem we have is this:

- Homes require too much energy to stay warm,
- People do not have the physical means to provide that energy efficiently, and
- People may not have the financial means to pay for their energy costs.

As such, a comprehensive solution will:

- 1. Make it so that homes retain heat better,
- 2. Empower people to heat their homes at a lower cost, and
- 3. Make it easier for people to meet that cost.

This will require:

- Minimum energy efficiency standards for rentals (1, 2),
- Increasing household incomes (3), and
- Tenancy law reform (1,2,3).

Minimum energy efficiency standards for rentals

Governments should require rental properties to meet a minimum energy efficiency standard before they can be rented out. This standard should prompt retrofits like ceiling insulation and window treatments, that improve heat retention, as well as measures like efficient reverse-cycle heating systems that are a much cheaper source of warmth in winter compared to ducted gas or plug-in heaters.

Jurisdictions are already collaborating on a framework for minimum rental requirements, and Victoria and the ACT are leading on implementation in this area. Action on this issue will lead to lower household bills, as well as improved public health. Typical estimates are that the health benefits alone would justify investment in this area.

Increase household incomes for low-income households

Many households in Australia — particularly in the rental sector — are suffering under the twin burdens of high energy bills and low incomes. While energy efficiency can help

to reduce energy bills, raising household incomes will make it easier for people to afford energy costs, making it less likely that people are forced to choose between heating and eating.

This could be achieved through increases to income support payments such as JobSeeker and the Disability Support Pension. The rates of these payments should allow people a decent, dignified existence. Increasing Commonwealth Rent Assistance would achieve a similar outcome, recognising that people renting typically face higher housing costs than owners, including energy costs.

Strengthen tenant protections

The power imbalance between tenants and landlords contributes to the poor-quality of rental housing and can force people to put up with a poorly-maintained, inadequate dwelling. Although current rental laws require landlords to maintain a rental property and its fixtures, a number of Researchers had heaters that weren't maintained, or where a tenant was too worried about retaliation to ask for repairs.

Action in this area will make it easier for tenants to exercise existing legal rights, as well as contribute to the more effective implementation of minimum standards. The most critical change here is getting rid of legal manoeuvres that allow landlords to retaliate against tenants and thus discourage self-advocacy. This must include the abolition of no cause terminations, including at the end of a fixed term, and a shift to a 'good cause' framework for ending tenancies.

In addition, as rent increases can also be used to push a tenant out of a property, appropriate protections should be put in place to ensure that rent increases are moderated and kept affordable. Improving landlord responsiveness to maintenance requests will improve dwelling standards and reduce energy costs, while targeting rent increases will also strengthen household budgets and make it easier for people to cover utility bills.

Conclusion

"It's not that I have terrible landlords or anything, it's just that any of those changes to make a family healthy, I can't make. It's not normal to be living in a mouldy apartment. It's not normal to live in a mouldy home."

Every winter, millions of people in Australia bunker down in anticipation of shivering through the next few months. Our uninsulated, draughty, potentially harmful housing is cold and costly: people get sick more often, suffer worse mental health, and face higher power bills and the material deprivation they cause.

Through our Winter Renter Researchers project, we heard from over 70 renters across Australia about their experiences of winter cold. Many of these people experienced abject cold in draughty, substandard homes. Even with persistent heating, it was not possible to get these homes up to a decent temperature. As a consequence, it was utterly normal for people to be enduring temperatures and humidity levels outside of healthy ranges. This had various harmful effects:

- Damp and mould in rental homes, with negative effects on wellbeing,
- Higher energy bills, causes stress and anxiety, as well as material deprivation in other areas,
- Worse mental and physical health.

To address this phenomenon, we recommend establishing minimum energy efficiency standards for rental homes, which would drive the uptake of basic measures like ceiling insulation and efficient heat pumps. Combining this with increased income support for low-income households and stronger tenancy rights would make it easier for people to pay their bills and ensure their home is decently maintained.

People who rent are not unique in finding housing too cold in winter. But renters are in a unique situation. Unlike owner occupiers, renters cannot make the needed changes to bring their homes up to standard. Even if they could, insecure short-term tenure makes it much harder to justify such investment. As such, while much housing in Australia ought to be retrofitted, the solution must look different in the rental sector.

For too long, we have accepted the unacceptable when it comes to our housing. It's so standard for a home to be too cold that many people don't even realise what's possible: that it is readily achievable for homes to be warm, dry and decent. With so many more people renting, this problem has only become more pressing. Everyone should have a healthy home. It is the duty of our governments to make this a reality.

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