



# Income-based inequities in access to psychotherapy and other mental health services in Canada and Australia

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## ARTICLE INFO

### Article history:

Received 4 April 2018

Received in revised form 24 July 2018

Accepted 10 October 2018

### Keywords:

Mental health  
Access  
Canada  
Australia  
Equity  
Income

## ABSTRACT

This paper compares income-based inequities in access to psychotherapy and other mental health services in Canada and Australia, two federal parliamentary systems with sharply contrasting responses to high rates of unmet need. Income-based inequity is measured by need-standardized concentration indices, using comparable data from the *Canadian Community Health Survey 2011–2012* and the *Australian National Survey of Mental Health and Well-Being 2007*. The results indicate that utilization of psychologist services is more concentrated at higher income levels (i.e. pro-rich) than the other provider groups in both countries, and may be more pro-rich in Canada than in Australia. While the distribution of unmet need for psychotherapy was expected (as a negative indicator of access) to be more concentrated at lower income levels (i.e. pro-poor) under Canada's two-tier system, unmet need was not more equitable in Australia despite expanded public insurance coverage. As psychotherapy was made universally affordable for the first time in Australia in 2006, a possible backlog effect may have driven up both service utilization and unmet need, particularly among lower-income Australians. The impact of different Medicare co-payment policies also warrants further exploration.

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## 1. Introduction

Mental health problems and illnesses affect one in five Canadians and Australians in any given year [1,2]. Both systems have been characterized by gaps in public health insurance and funding: psychologists and other allied mental health professionals have traditionally not been covered by Medicare in either country, and only 7% and 8% of total public spending on health in Canada and Australia, respectively, is spent on mental health care [3–5]. Unmet need is common in both countries: in 2007 one in three Australians with a mental disorder reported that they were not accessing services, and in 2012 one in three Canadians who reported having a need for counselling reported that this need was not met [1,6].

This paper compares income-based inequities in access to psychotherapy and other mental health services in Canada and Australia, two federal parliamentary systems with sharply contrasting responses to similarly high rates of unmet need. While Canada is only starting to expand access, Australia introduced the population-wide Better Access to Psychiatrists, Psychologists

and General Practitioners initiative in 2006 (Better Access; [7]). Analyzing the distribution of access by income is particularly policy relevant in 2018 as the Canadian federal government has committed to transferring \$5 billion to provincial and territorial governments to improve access to mental health services over the next ten years [8], and as Australia recently launched its fifth national mental health plan [9].

Broader attention to socio-economic inequities in the 21<sup>st</sup> century has spurred the development of new international research on inequities in both health outcomes and access to health services, often using Concentration Indices (CIs) to measure inequity [10–16]. CI values range from –1 to +1, with negative values indicating a pro-poor concentration at lower income levels, positive values indicating a pro-rich concentration at higher income levels, and zero indicating an equitable distribution. Pro-poor CI values have indicated higher concentrations of mental health problems at lower income levels in the United Kingdom [17], and researchers have used CIs (without standardizing for need) to measure inequities in access in the United Kingdom and Australia [18–20]. In Canada, research on inequities in access to mental health services has thus far used regression analysis or broken out access by income deciles, without calculating CIs [6,21–23].

The evidence regarding inequities in access to psychotherapy has been mixed to date in both Australia and Canada. Since the

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outset of Better Access in 2006, there was concern that a Medicare-based model would create incentives for psychologists and other non-physician providers to target their services to higher-income clients who can afford co-payments. Controversy heightened when the 2011 evaluation found that inequities in access were not a significant problem, only to be criticized for basing this conclusion on too small of a sample [24,25]. A more recent CI-based study of administrative data found pro-poor distribution of service utilization for most Better Access items, but pro-rich distribution for face-to-face consultations with both psychiatrists and clinical psychologists [19]. In Canada, regression analysis of survey data has found that need is the most important predictor of service utilization, suggesting a relatively equitable system [22,23]. However, income and education have also been found to be important predictors of mental health service utilization, an indication that there are equity issues [26,23].

There have been few studies comparing Canada and Australia. A recent study by Enticott et al. [27] found a pro-poor distribution (measured by CIs) of distress in both Australia and Canada with more pronounced inequity in Australia. They did not examine access to mental health care.

This paper is the first to measure inequities in access to mental health services in Canada using CIs and the first to compare need-standardized CIs in Canada and Australia. We use CIs to measure income-based inequities in two dimensions of access to mental health services – utilization of professional services and unmet needs for psychotherapy. This analysis is supported by the similarity of the *Canadian Community Health Survey (CCHS)* and the *Australian National Survey of Mental Health and Well-Being (NSMHWB)* in both the questions asked and the population sampled. From a comparison of the service systems in Canada and Australia, we predict that inequities will be greater for the services of psychologists and other non-physician providers than for physicians and greater in Canada than in Australia.

Psychotherapy in Canada is currently provided through a two-tier system. First-dollar public financing covers a narrow range of services that are provided by physicians in either private practice, hospitals, or publicly-funded clinics. While there is limited public funding for the broader range of services that are provided by psychologists and other mental health professionals (non-physician providers), waiting lists for these services are long [28,29]. Non-physician services are offered in the private sector and financed by employment-based insurance or out-of-pocket payments. Accordingly, the cost of psychotherapy services that are not covered by public insurance is higher for the estimated twelve million, generally lower-income Canadians who do not have employment-based benefits than for the generally middle-to-higher income Canadians who have such benefits [30]. Further, higher-income Canadians are most able to afford to pay out-of-pocket for non-physician psychotherapy. We expect that these financial barriers make it less likely for lower-income Canadians with mental health problems to utilize non-physician psychotherapy than higher-income Canadians, and, therefore, more likely to have unmet needs for mental health services.

The two tiers in Australia's mental health care system are less distinct, as private financing plays a stronger role in the provision of all health services. Australian Medicare is a universal public health insurance program, which allows providers two options for billing. Providers can offer care free at the point of delivery by billing the government directly (known as *bulk-billing*), thus avoiding the costs and risks of billing and debt collection and removing financial barriers for low-income service users. Alternatively, they can charge co-payments depending on ability to pay by billing service users directly [31]. Further, the federal government provides incentives for Australians to purchase private insurance by providing rebates for those who do and increasing the Medicare levy for those who

do not [32]. Accordingly, out-of-pocket health costs, including co-payments and private insurance, are higher in Australia than in Canada (20% vs 15% of total health expenditures, respectively [33]).

Australian Medicare started to cover psychotherapy provided by non-physician mental health providers in 2006 with the introduction of Better Access, which provides the same universal coverage and discretion over co-payments as Medicare in general. There is evidence to suggest that the rate of co-payments is higher under Better Access than under Medicare overall. In 2007–2008, 73 per cent of Medicare services as a whole were bulk-billed; however, only 47 per cent of allied health services, which includes the non-physician Better Access items as well as other allied health services, were bulk-billed [34,35]. Moreover, between 2007 and 2010, 65.5 per cent of Better Access users made a co-payment, meaning that only 34.5 per cent were exclusively bulk-billed [36]. Private insurance cannot be used to cover co-payments for Medicare services that are not bulk-billed [37].

From this description of the Australian service system, lower-income Australians either pay less, if providers opt to bulk-bill, or pay the same, if providers charge the same co-payment, as higher-income Australians for psychotherapy services. This difference is less pronounced for non-physician providers because the difference in co-payment rates means that lower-income Australians are more likely to pay less for physician services than for psychologists and the services of other non-physicians. We expect that these differences in financial barriers make it more likely for lower-income Australians with mental health problems to utilize psychotherapy than higher-income Australians and, therefore, to have lower rates of unmet needs. However, this tendency is counterbalanced by the fact that the same co-payment is more affordable for higher-income Australians than for lower-income Australians.

Based on the differences between the Canadian and Australian systems, we expect that income-based inequities in access to psychotherapy may be more pronounced in Canada. Lower-income Canadians either pay more (because they are less likely to have access to employment-based benefits that cover non-physician services) or pay the same (for psychotherapy services provided free-at-point-of-delivery by physicians) as higher-income Canadians. By contrast, lower-income Australians either pay less (through bulk-billing) or pay the same (through co-payments) as higher-income Australians. While it is true that lower-income Australians are more likely to have to pay co-payments for psychotherapy services provided by non-physicians than by physicians, lower-income Australians do not pay *more* for non-physician psychotherapy than higher-income Australians as is the case in Canada.

Accordingly, an overarching hypothesis for this paper is that income-based inequities in access to psychotherapy will be more pronounced in Canada than in Australia, and closer to equity in Australia. We hypothesize that the utilization of non-physician providers will be more pro-rich in both countries than the utilization of physician providers (H1). However, we predict that utilization of non-physician psychotherapy services will be more pro-rich in Canada than in Australia (H2). Following from predictions regarding inequities in utilization (a positive indicator of access), we expect unmet need for psychotherapy services (a negative indicator of access) to be more pro-poor in Canada than in Australia (H3).

## 2. Materials and methods

Basic CIs illustrate how the share of various health and social outcomes is concentrated along the distribution of income or other indicators of socio-economic advantage, with a positive value indicating a pro-rich concentration and a negative value indicating a pro-poor concentration [38]. This study uses basic CIs to compare

the distribution of access to psychotherapy and other mental health services by income in Australia and Canada.

Four categories of variables are needed for calculating need-standardized income-based inequities in access to psychotherapy and other mental health services: outcome, need, non-need (control), and ranking variables [39]. To measure both realized and potential access [40], past-year service utilization of various health professionals and past-year unmet need for psychotherapy are included as dichotomous outcome variables. A probit function is used to estimate expected access based on three need variables: age, sex and self-reported poor/fair mental health (the only specific mental health variable that was collected by both *NSMHWB* and by all of the provinces in each of the *CCHS* surveys). To control for potential bias, education, immigrant status, residence in non-urban areas, and equivalized household income are also included as non-need variables in the probit function. Predicted access is calculated as a function of individual level of need-variables and the sample mean of the control variables.

Next, the indirect method of standardization is used in keeping with the availability of microdata from all three surveys [39]. Need-standardized access is calculated by subtracting the predicted access from the actual access and adding back the mean of predicted access. Finally, income-based inequity of access to health services is measured by calculating CIs for actual access and for need-standardized access, using equivalized household income as the ranking variable. A need-standardized CI is a measure of any residual inequity in access that remains after the distribution of access that can be predicted based on need is subtracted from the actual distribution of access. P-values and 95% confidence intervals are also reported.

Data is drawn from the *CCHS Annual 2011-12* (for the utilization comparison) and the *CCHS Mental Health (CCHS MH) 2012* (for the unmet need comparison), and from the Australian *NSMHWB 2007*. The *CCHS Annual* (age 12+, N~65,000 annually) is a cross-sectional, self-report survey on health status, health care utilization and health determinants for the Canadian population (Statistics [41]). The *CCHS Annual* excludes members of the Canadian Forces and people living on reserves, in prisons, or in institutional settings such as long-term care and hospitals. The *CCHS MH 2012* (age 15+, N = 25,113) is the most recent in-depth survey regarding mental health issues, attitudes and service utilization and excludes the same population groups (Statistics [42]). The *NSMHWB 2007* is also a cross-sectional, self-report survey that provides data regarding mental disorders and service utilization, with a smaller and slightly older sample (age 16–85, N = 8,800; [43]). The *NSMHWB 2007* excludes people living in institutional settings but includes indigenous people and members of the military.

Variables from the *CCHS* and the *NSMHWB* have been coded to make the data as comparable as possible. For the outcome variables, past-year utilization variables are distinguished by the provider of care: general practitioners (GPs), psychiatrists, psychologists, and “other mental health professional” including social workers. Data from *CCHS MH 2012* was not used for the utilization variables because the addition of substance use to the survey questions is not comparable to the *NSMHWB* and may complicate the equity picture to the extent that substance use has a different income gradient than other mental disorders. Dichotomous variables were created by coding unmet need for counselling (here equated with psychotherapy) or partially met need as 1 and met need or no need as 0. Unmet need includes both respondents who accessed psychotherapy but did not receive enough, and respondents who needed psychotherapy but did not access it.

The age range for both of the *CCHS* surveys is constrained to align with the 16–85 age range of the *NSMHWB*. To align the educational attainment categories, education is divided into four dummy variables according to the highest level of educational attainment by

**Table 1**  
Descriptive statistics: outcome, need, non-need and ranking variables (weighted).

Variable	Australia	Canada	Canada
	NSMHWB 2007	CCHS Annual 2011-12	CCHS MH 2012
	%	%	%
<b>Outcome</b>			
Util: GP	8.3	7.3	NA
Util: psychiatrist	2.3	2.6	NA
Util: psychologist	3.7	2.9	NA
Util: other	2.3	3.3	NA
Unmet need: psychotherapy	4.5	NA	4.5
<b>Need</b>			
Age 16-24	14.5	14.9	14.6
Age 25-34	17.7	17.0	16.3
Age 35-44	20.1	17.3	17.6
Age 45-54	18.1	18.7	19.1
Age 55-64	14.4	16.8	16.3
Age 65-74	9.4	10.1	10.6
Age 75-85	6.2	5.2	5.8
Female	50.3	50.8	50.7
Male	49.7	49.2	49.3
Poor/fair mental health	8.7	5.8	7.8
<b>Non-need</b>			
Educ: Less than secondary	31.0	15.0	16.5
Educ: Secondary	13.7	24.3	23.2
Educ: Post-secondary, not uv.	24.0	33.0	32.5
Educ: Post-secondary, univ.	31.3	27.7	27.8
Immigrant	26.3	23.5	25.3
Non-Urban	34.4	28.6	27.3
<b>Non-need/ranking</b>			
Equivalized household income (weekly) <sup>a</sup>	Mean (Gini) AUD\$1059 (.414)	Mean (Gini) CAD\$980 (.388)	Mean (Gini) CAD\$962 (.387)

<sup>a</sup> NSMHWB weekly equivalized household income, 2007 AUD\$; CCHS Annual equivalized household income divided by 52, 2011-12 CAD\$.

the respondent: “less than secondary school”, “secondary school”, “post-secondary qualification, not university”, and “post-secondary qualification, university”. Non-urban is coded as one for people living outside of urban areas (urban or secondary core for *CCHS* and major or other urban for *NSMHWB*).

The household income variable is transformed in three ways. First, household income has been equivalized (divided by the square root of household size) to account for differences in the purchasing power of different-sized households [44]. The household size used for the equivalization formula has been capped at 8 to match the Australian data. Second, annual *CCHS* equivalized household income has been divided by 52 to obtain weekly amounts as per *NSMHWB*. Third, a small, random unique amount has been added to equivalized household income to break ties between identical income values, thus ensuring that each income value is unique and allowing for the effective use of household income as a ranking variable. Observations with missing values have been dropped from the study.

As can be seen from the frequencies in Table 1, the Canadian and Australian samples are broadly similar, although the Australian sample is somewhat younger, less urban, and has lower rates of secondary education (consistent with OECD findings; [45]). There is also some variation in the reporting of poor/fair mental health (8.7% in *NSMHWB*, 5.8% in *CCHS Annual 2011-12*, and 7.8% in *CCHS MH 2012*).

### 3. Results

The results presented in Table 2 and Fig. 1 confirm that there is an income gradient in the distribution of poor/fair mental health in both countries, with a similarly pro-poor CI value in Australia

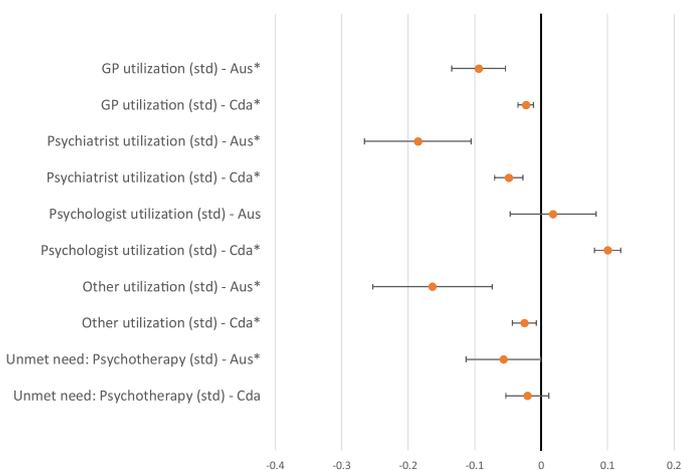
**Table 2**  
Basic and need-standardized Concentration Indices (weighted).

Variable	Australia NSMHWB 2007		Canada CCHS Annual 2011–12		Canada CCHS MH 2012	
	CI	CIst <sup>a</sup>	CI	CIst <sup>a</sup>	CI	CIst <sup>a</sup>
Poor/fair mental health	–0.267 <sup>*</sup> (–0.308, –0.226)	NA	–0.258 <sup>*</sup> (–0.271, –0.245)	NA	–0.235 <sup>*</sup> (–0.259, –0.210)	NA
Util: GP	–0.15 <sup>*</sup> (–0.194, –0.109)	–0.094 <sup>*</sup> (–0.134, –0.054)	–0.074 <sup>*</sup> (–0.086, –0.061)	–0.023 <sup>*</sup> (–0.035, –0.011)	NA	NA
Util: psychiatrist	–0.257 <sup>*</sup> (–0.340, –0.174)	–0.185 <sup>*</sup> (–0.266, –0.105)	–0.145 <sup>*</sup> (–0.167, –0.123)	–0.049 <sup>*</sup> (–0.070, –0.027)	NA	NA
Util: psychologist	+0.001 (–0.065, 0.067)	+0.018 (–0.047, 0.082)	+0.065 <sup>*</sup> (0.045, 0.085)	+0.100 <sup>*</sup> (0.080, 0.120)	NA	NA
Util: other	–0.218 <sup>*</sup> (–0.310, –0.127)	–0.164 <sup>*</sup> (–0.256, –0.074)	–0.079 <sup>*</sup> (–0.098, –0.061)	–0.025 <sup>*</sup> (–0.043, –0.007)	NA	NA
Unmet need: psychotherapy	–0.095 (–0.154, –0.036)	–0.057 (–0.113, –0.000)	NA	NA	–0.095 <sup>*</sup> (–0.128, –0.061)	–0.021 (–0.053, 0.012)

95% confidence intervals in parentheses.

<sup>\*</sup> p<.05.

<sup>a</sup> CIst calculated by (a) standardizing for age, sex and self-reported poor/fair mental health, (b) controlling for education, immigration, non-urban residence, and equivalized household income, and (c) ranking by equivalized household income.



**Fig. 1.** Comparison of need-standardized Concentration Indices (CIs) for access to mental health services in Australia (2007) and Canada (2011 and/or 2012), with 95% confidence intervals. CIs are standardized for age, sex and self-reported poor/fair mental health, controlled for education, immigration, non-urban residence, and equivalized household income, and ranked by equivalized household income.

<sup>\*</sup>p<.05.

(–0.267; 95% ci = –0.308;–0.226) and Canada (–0.258; 95% ci = –0.271;–0.245 and –0.235; 95% ci = –0.259;–0.210). This result underscores the importance of first standardizing for need before measuring income-based inequity in access to mental health services. To be equitable, utilization should be as concentrated at lower income levels as need.

The next set of results compares the degree of income-based inequity in the utilization of the services of various types of mental health professionals, after standardizing for need and controlling for non-need demographic variables, for both Canada and Australia. As predicted in H1, the utilization of psychologists is more pro-rich than physician providers in both countries. The need-standardized CIs for utilization of GPs and psychologists in Australia are –0.094 (95% ci = –0.134;–0.054) and +0.018 (95% ci = –0.047;0.082) respectively, and in Canada are –0.023 (95% ci = –0.034;–0.011) and +0.100 (95% ci = 0.080;0.120) respectively. The utilization of psychologists is also more pro-rich than psychiatrists in both countries. The need-standardized CIs for utilization of psychiatrists in Australia is –0.185 (95% ci = –0.266;–0.105) and in Canada is –0.049 (95% ci = –0.070;–0.027). We find no support for H1 when comparing other non-physician providers (such as social workers) to GPs. Rather than being more pro-rich, the need-standardized CIs for other providers are more pro-poor than for GPs in both coun-

tries. Comparing psychiatrists to other non-physician providers, we cannot conclude that the CIs are different between these providers.

The results for H2 are not conclusive. As predicted, the point estimate for the need-standardized CI for psychologist utilization is more pro-rich in Canada at +0.100 (95% ci = 0.080;0.120) than in Australia +0.018 (95% ci = –0.047;0.082), but we cannot conclude that this difference is statistically significant. For other non-physician providers, the need-standardized CI is significantly less pro-poor in Canada (–0.025; 95% ci = –0.043;–0.007) than in Australia (–0.164; 95% ci = –0.256;–0.074).

The last set of results compares the income distribution of unmet need for psychotherapy in Australia and Canada. The results do not support H3, which predicted that unmet need for psychotherapy (as a negative indicator of access) would be more pro-poor under Canada's two-tier system than in Australia, with its Better Access initiative. Rather, the point estimates are in the opposite direction: the need-standardized CI for unmet need for psychotherapy is more pro-poor in Australia than in Canada (–0.057; 95% ci = –0.113;–0.000 vs –0.021; 95% ci = –0.053;0.012).

#### 4. Discussion

We find support for the first hypothesis that predicts more inequitable distributions for non-physicians than physicians in both countries (H1), and tentative support for a more pro-rich distribution of non-physician service utilization in Canada than in Australia (H2). In both countries, the distribution for psychologists is more pro-rich than the distribution for GPs or psychiatrists, which supports H1. Canada has a more pro-rich distribution for psychologists and a less pro-poor distribution for other non-physician providers than Australia, which supports H2, although the statistical significance of the finding for psychologists could not be confirmed. However, unmet need for psychotherapy is not found to be more pro-poor in Canada than in Australia as predicted in H3. Further, the Australian need-standardized CIs are not consistently more equitable (ie. closer to zero) than the Canadian results, but are rather more pro-poor (ie. concentrated at lower income levels) for both utilization and unmet need (although the findings for unmet need are not statistically significant). The point estimates for psychiatric utilization are also more pro-poor than any other provider in both Canada and Australia, despite having been grouped together with GPs in the study's hypotheses. Possible explanations for these mixed results and implications for future research and policy are discussed below.

While no causal inferences can be drawn from the descriptive CI statistics used in this study, these results suggest that poli-

cies have an impact on equity. The absence of public insurance and the limited coverage of employment-based insurance coverage for psychologist services in Canada, and the higher co-payment rates for psychologists in Australia, would seem to contribute to lower-income service users facing higher financial barriers for psychologist services than for physician services in both countries. The higher financial barriers faced by lower-income users for psychologist services in Canada than in Australia may also contribute to what would appear to be higher concentrations of utilization at higher levels of income, although further evidence is necessary to support this conclusion.

The finding that H1 holds for psychologists but not for other non-physician service providers likely stems from a higher concentration of psychologists in private practice where financial barriers are more salient in both Australia and Canada, and a higher concentration of other non-physician providers such as social workers in public sector settings such as hospitals [46,47].

The more pro-poor point estimates for psychiatry in both countries were unexpected. With universal coverage for all physician services and co-payments prohibited under Canadian Medicare, the equitable need-standardized CI for GP utilization makes sense but not the pro-poor result for psychiatry. In Australia where co-payments are allowed for all providers, Meadows et al. [19] found a mix of pro-poor and pro-rich CIs for psychiatry Medicare items before standardizing for need, which would have shifted the CI results even further away from our pro-poor results. Differences in co-payment rates between psychiatrists and other providers in Australia warrant further exploration, as do differences in psychiatry clientele in both countries. In our study, self-reported poor/fair mental health may not have adequately standardized for need of psychiatry services, which tends to be among users who have more severe forms of mental illness. A larger sample would also strengthen our confidence in the Australian findings, as there is overlap in the confidence intervals for GP and psychiatry utilization.

The results regarding unmet need for psychotherapy are the opposite of the prediction in H3. Even though lower-income Australians would seem to face fewer financial barriers to accessing psychotherapy than their Canadian counterparts, they do not have lower rates of unmet need. This unexpected result is illustrative of an unforeseen and broader trend, namely that the Australian point estimates are not necessarily more equitable but rather more pro-poor (or less pro-rich) than the Canadian results for every variable (see Table 2 and Fig. 1). The need-standardized CI for psychologists is +0.100 in Canada but only +0.018 in Australia, and the need-standardized CI for GPs is –0.023 in Canada and –0.094 in Australia. Further, these differences originate in the basic CI values before they have been standardized for need and controlled for the non-need variables and are thus not attributable to the small differences between these variables in the Australian and Canadian samples. For example, the basic CI for GP utilization in Australia is –0.151 compared with –0.074 in Canada, and the basic CI for utilization of other mental health professionals is –0.218 in Australia and –0.079 in Canada.

Policy differences hold some promise for explaining the more pro-poor Australian results. Canada in 2011 and 2012 was holding steady with its long-standing two-tier policy. However, in 2007 Better Access provided more affordable access to psychotherapy for the first time to a population with long-high rates of unmet need and provided physicians with new referral options. This high-profile reform could have had a backlog effect. Better Access could have driven up utilization rates among lower-income Australians such that use outstripped previously reported levels of need, while at the same time exacerbating unmet need for psychotherapy to the extent that demand from lower-income Australians exceeded supply in the first phase of implementation. Moreover, the introduction of Better Access followed six years after the 2000 launch

of *beyondblue*, a major anti-stigma initiative in Australia [48]. As stigma decreased and more people became willing to seek help, both demand and unmet need could have been driven up across the population. Further research and data collection would need to be undertaken to test this backlog effect hypothesis, with particular attention to workforce impacts and stigma.

There are several policy implications of this study. First, by removing financial barriers that see lower-income Canadians facing the highest prices for psychotherapy, a Better Access-like reform has the potential to reduce (but not necessarily eliminate) income-based inequities in access. Second, even eleven years after the introduction of Better Access and as the fifth national mental health plan is launched in Australia, there would appear to be significant gaps in knowledge regarding such inequities. Australian studies on inequities in access to psychotherapy have been characterized by controversies over both methodology and policy implications. Results from Canadian studies have also been mixed. Accordingly, both Canada and Australia would do well to strengthen their monitoring of income-based inequities in access, including both utilization and unmet need rather than just one or the other. These monitoring efforts should be supported by data collection from a range of sources, including surveys, administrative data and qualitative research.

## 5. Conclusions

By comparing need-standardized concentration indices in Canada and Australia, this paper provides novel and timely evidence of income-based inequities in access to psychotherapy and other mental health services. Canada is poised to invest \$5B over the next ten years to improve access to mental health services. Were Canada to adopt the Australia model of expanded public insurance coverage, the results suggest that income-based inequities in access to psychologist services could be reduced. To the extent that a backlog effect may have indeed occurred in Australia upon the introduction of Better Access in 2006, Canada would be wise to prepare for a possible surge of both utilization and unmet need as it rolls out new efforts to improve access to psychotherapy. Further, this surge in Australia was more concentrated at lower income levels than even need would predict. In Canada, a similar backlog effect could be viewed as a form of reparation for long-standing gaps in insurance coverage.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Declarations of interest

None

## Acknowledgement

The authors thank Allan M. Maslove for his helpful comments on earlier versions of this paper, and acknowledge the support of Statistics Canada's Carleton Ottawa Outaouais Local Research Data Centre.

## References

- [1] Australian Bureau of Statistics. National Survey of Mental Health and Well-Being: Summary of Results 2007 [website]; 2007. Retrieved March 27 2018 from <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4326.0Main%20Features12007?opendocument&tabname=Summary&prodno=4326.0&issue=2007&num=&view>.

- [2] Smetanin P, Stiff D, Briante C, Adair CE, Ahmad S, Khan M. The life and economic impact of major mental illnesses in Canada: 2011 to 2041. Risk Analytica, on behalf of the Mental Health Commission of Canada; 2011.
- [3] Australian Institute of Health and Welfare. Mental health services in Australia: expenditure on mental health-related services [web report]; 2018. Retrieved March 27 2018 from <https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/mental-health-resources/expenditure-on-mental-health-related-services>.
- [4] Jacobs P, Dewa C, Lesage A, Vasiliadis H-M, Escobar C, Mulvale G, et al. The cost of mental health and substance abuse services in Canada. Edmonton: Institute of Health Economics; 2010.
- [5] OECD. Focus on health: making mental health count. Paris: author; 2014. Retrieved March 27 2018 from <https://www.oecd.org/els/health-systems/Focus-on-Health-Making-Mental-Health-Count.pdf>.
- [6] Sunderland A, Findlay LC. Perceived need for mental health care in Canada: results from the 2012 Canadian Community Health Survey—mental health. *Stat Can Health Rep* 2013;24(9):3–9.
- [7] Australia. Better access to psychiatrists, psychologists and general practitioners through the MBS initiative [website]; 2017. Retrieved March 27 2018 from <http://www.health.gov.au/internet/main/publishing.nsf/Content/mental-ba>.
- [8] Canada Finance. Building a strong middle class. Ottawa, ON: Author; 2017.
- [9] Council of Australian Governments Health Council. The fifth national mental health and suicide prevention plan. Canberra: Commonwealth of Australia, Department of Health; 2017. Retrieved March 27 2018 from <https://www.coaghealthcouncil.gov.au/Portals/0/Fifth%20National%20Mental%20Health%20and%20Suicide%20Prevention%20Plan.pdf>.
- [10] Grignon M, Hurley J, Wang L, Allin S. Inequity in a market-based health system: evidence from Canada's dental sector. *Health Policy* 2010;98(1):81–90.
- [11] Hosseinpoor AR, Itani L, Petersen PE. Socio-economic inequality in oral healthcare coverage: results from the world health survey. *J Dent Res* 2012;91(3):275–81.
- [12] Hua X, Erreygers G, Chalmers J, Laba T-L, Clarke P. Using administrative data to look at changes in the level and distribution of out-of-pocket medical expenditure: an example using Medicare data from Australia. *Health Policy* 2017;121(4):426–33.
- [13] Jiménez-Rubio D, Smith PC, Van Doorslaer E. Equity in health and health care in a decentralised context: evidence from Canada. *Health Econ* 2008;17(3):377–92.
- [14] Tavares LP, Zantomio F. Inequity in healthcare use among older people after 2008: the case of southern European countries. *Health Policy* 2017;121(10):1063–71.
- [15] Van Doorslaer E, Masseria C, the OECD Health Equity Research Group Members. Income-related inequality in the use of medical care in 21 OECD countries. OECD Health Working Paper #14. Paris: OECD.; 2004.
- [16] Zhang X, Wu Q, Shao Y, Fu W, Liu G, Coyte PC. Socioeconomic inequities in health care utilization in China. *Asia Pac J Public Health* 2015;27(4):429–38.
- [17] Mangalore R, Knapp M, Jenkins R. Income-related inequality in mental health care in Britain: the CI approach. *Psychol Med* 2007;37(7):1037.
- [18] Jokela M, Batty GD, Vahtera J, Elovainio M, Kivimaki M. Socioeconomic inequalities in common mental disorders and psychotherapy treatment in the UK between 1991 and 2009. *Br J Psychiatry* 2013;202(2):115–20.
- [19] Meadows GN, Enticott JC, Inder B, Russell GM, Gurr R. Better access to mental health care and the failure of the Medicare principle of universality. *Med J Aust* 2015;202(4):190–4.
- [20] Meadows GN, Tylee AT. Socioeconomic disadvantage and psychotherapy. *Br J Psychiatry* 2013;202(2):86–8.
- [21] Kurdyak P, Stukel TA, Goldbloom D, Kopp A, Zagorski BM, Mulsant BH. Universal coverage without universal access: a study of psychiatrist supply and practice patterns in Ontario. *Open Med* 2014;8(3):e87–99.
- [22] Lewis JD. Mental health services in Canada: building a model of mental health care utilization (Unpublished doctoral dissertation). Regina: University of Regina; 2013. Retrieved March 27 2018 from <http://ourspace.uregina.ca/bitstream/handle/10294/3842/Lewis.John.Dufton.200230739.Phd.ClinPsc.Fall2013.pdf?sequence=1>.
- [23] Vasiliadis H-M, Tempier R, Lesage A, Kates N. General practice and mental health care: determinants of outpatient service use. *Can J Psychiatry*, *Revue Canadienne De Psychiatrie* 2009;54(7):468–76.
- [24] Hickie IB, Rosenberg S, Davenport TA. Australia's Better Access Initiative: Still Awaiting Serious Evaluation? *Aust N Z J Psychiatry* 2011;45(10):814–23.
- [25] Pirkis, J., Harris, M., Hall, W., & Ftanou, M. (2011). Evaluation of the Better Access to Psychiatrists, Psychologists and General Practitioners through the Medicare Benefits Schedule initiative: Summative evaluation. Melbourne: Centre for Health Policy, Programs and Economics, University of Melbourne.
- [26] Hunsley J, Lee CM, Aubry T. Who uses psychological services in Canada? *Can Psychol Can* 1999;40(3):232–40.
- [27] Enticott JC, Lin E, Shawyer F, Russell G, Inder B, Patten S, et al. Prevalence of psychological distress: how do Australia and Canada compare? *Aust N Z J Psychiatry* 2017, <http://dx.doi.org/10.1177/000486741770>.
- [28] Ontario, & Office of the Auditor General. (2016). Annual report 2016. Volume 1 of 2. Toronto, ON: Author.
- [29] Peachey D, Hicks V, Adams O. An imperative for change: access to psychological services for Canada. Toronto: Health Intelligence Inc; 2013. Retrieved from [www.cpa.ca/docs/File/Position/An\\_Imperative\\_for\\_Change.pdf](http://www.cpa.ca/docs/File/Position/An_Imperative_for_Change.pdf).
- [30] Canadian Life and Health Insurance Industry. Canadian life and health insurance facts [website]. Toronto: Author; 2016. Retrieved March 27 2018 from [https://www.clhia.ca/domino/html/clhia/CLHIA\\_LP4W\\_LND.Webstation.nsf/resources/Factbook\\_2/\\$file/2016+CLHIA+Factbook+ENG.pdf](https://www.clhia.ca/domino/html/clhia/CLHIA_LP4W_LND.Webstation.nsf/resources/Factbook_2/$file/2016+CLHIA+Factbook+ENG.pdf).
- [31] OECD. OECD reviews of health care quality: Australia 2015: raising standards. Paris: author; 2015. Retrieved March 27 2018 from [http://www.oecd-ilibrary.org/social-issues-migration-health/oecd-reviews-of-health-care-quality-australia-2015\\_9789264233836-en](http://www.oecd-ilibrary.org/social-issues-migration-health/oecd-reviews-of-health-care-quality-australia-2015_9789264233836-en).
- [32] Australia. Private health insurance rebate [website]. Canberra: Author; 2017. Retrieved March 27 2018 from <https://www.ato.gov.au/individuals/medicare-levy/private-health-insurance-rebate/>.
- [33] OECD. Health at a glance: how does Australia compare? Paris: Author; 2015. Retrieved March 27 2018 from <https://www.oecd.org/australia/Health-at-a-Glance-2015-Key-Findings-AUSTRALIA.pdf>.
- [34] Australia. Medicare benefits schedule book 2017. Canberra: Author; 2017. Retrieved March 27 2018 from [http://www.health.gov.au/internet/mbsonline/publishing.nsf/Content/40850814C15481DECA25813F001555DC/\\$File/201707-MBS.pdf](http://www.health.gov.au/internet/mbsonline/publishing.nsf/Content/40850814C15481DECA25813F001555DC/$File/201707-MBS.pdf).
- [35] Australia. Annual Medicare statistics 1984–85 to 2016–17. Canberra: Author; 2017. Retrieved March 27 2018 from <http://www.health.gov.au/internet/main/publishing.nsf/Content/Annual-Medicare-Statistics>.
- [36] Harris M. Psychological therapy services in Australia [Powerpoint slides]. Presented at sharing learnings from early implementation of stepped care: a PHN collaborative workshop 2016. Retrieved March 27 2018 from <http://qcmhr.uq.edu.au/wp-content/uploads/2017/02/Session-6.Meredith-Harris.pdf>.
- [37] Australia. Better access to mental health care: questions and answers [website]. Canberra: Author; 2006. Retrieved March 27 2018 from <http://www.health.gov.au/internet/main/publishing.nsf/Content/coag-mental-q&a.htm>.
- [38] O'Donnell O, O'Neill S, Van Ourti T, Walsh B. conindex: estimation of concentration indices. *Stat J* 2016;16(1):112–38.
- [39] O'Donnell O, Bank World, editors. Analyzing health equity using household survey data: a guide to techniques and their implementation. Washington, D.C.: World Bank; 2008.
- [40] Riegle AL, Steward SD. Health care access and utilization among the poor. In: Fitzpatrick MK, editor. Poverty and health: a crisis among America's most vulnerable. Santa Barbara, California: Praeger; 2013. p. 183–208.
- [41] Canada Statistics. Canadian Community Health Survey – Annual Component: detailed information for 2015 [website]; 2015. Retrieved March 27 2018 from <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&id=164081>.
- [42] Canada Statistics. Canadian Community Health Survey –Mental Health: detailed information for 2012 [website]; 2013. Retrieved March 27 2018 from <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5015>.
- [43] Australian Bureau of Statistics. National Survey of Mental Health and Well-Being: users' guide 2007 [website]; 2009. Retrieved March 27 2018 from <http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/4327.0?OpenDocument>.
- [44] OECD. (n.d.). What are equivalence scales? Project on income distribution and poverty. Paris: Author. Retrieved March 27 2018 from <http://www.oecd.org/eco/growth/OECD-Note-EquivalenceScales.pdf>.
- [45] OECD. Adult education level (indicator). Paris: Author; 2017. Retrieved March 27 2018 from <https://data.oecd.org/eduatt/adult-education-level.htm>.
- [46] Health Workforce Australia. Australia's health workforce series: psychologists in focus. Adelaide (Australia): author; 2014.
- [47] Hunsley J, Ronson A, Cohen KR. Professional psychology in Canada: a survey of demographic and practice characteristics. *Prof Psychol Res Pr* 2013;44(2):118–26.
- [48] beyondblue. (n.d.). Our history [website] Retrieved March 27 2018 from <https://www.beyondblue.org.au/about-us/who-we-are-and-what-we-do/our-history2>.