

Filling the gap between evidence, policy and practice: are 45 and Up Study researchers planning for impact?

Tam C Ha^{a,b,d}, Martin McNamara^b, Luciano Melo^b, Emma K Frost^a and Gabriel M Moore^{b,c}

^a University of Wollongong, NSW, Australia

^b The Sax Institute, Sydney, NSW, Australia

^c University of Sydney, NSW, Australia

^d Corresponding author. tamha@uow.edu.au

Article history

Publication date: 18 May 2022

Citation: Ha TC, McNamara M, Melo L, Frost EK, Moore GM. Filling the gap between evidence, policy and practice: are 45 and Up Study researchers planning for impact? *Public Health Res Pract*. 2022; Online early publication. <https://doi.org/10.17061/phrp32122207>

Key points

- This is the first study in Australia that explores the impact planned and achieved in research projects from a large-scale prospective cohort study, the 45 and Up Study
- Most projects were intended to achieve policy and practice impact. However, a gap was identified between study planning and achieving impact because the impact was potentially achieved after project completion and outside of the study reporting period
- Future research would benefit from a more targeted approach to impact planning

Abstract

Aim: To improve health outcomes, policy and practice decisions should be guided by relevant and timely evidence. High-quality, large-scale population data could play an essential role in supporting evidence-based decision making.

The 45 and Up Study is a long-term, large-scale cohort study with more 250 000 participants aged 45 years and over from New South Wales (NSW), Australia. Data collected by the Study is accessible to researchers, government and non-governmental bodies.

The study aimed to identify the proportion of researchers using data from the Study who intended to have an impact and achieved impact; the types of impact they intended and achieved; and the pathways through which they achieved it.

Methods: Using data extracted from the application, progress and final report documents for 25 projects using 45 and Up Study data from January 2011 until December 2017, we a) determined the proportion of projects that intended to have policy or practice impact and b) described the type of policy and practice impact achieved.

Results: We found that 88% ($n = 22$) of projects intended to have a policy or practice impact. Of those, 68% ($n = 15$) planned to influence or inform a policy or program, and 41% ($n = 9$) planned to share findings at conferences or in journals. Almost half of projects with intended impact (45%, $n = 10$) did not state how they planned to achieve impact.

Approximately 16% of all projects ($n = 4$) reported achieving an impact on policy or services. The type of impact achieved by all four of these projects was influencing, informing or changing a policy or program. One of these four projects also achieved a change to legislation or regulation.

Conclusions: Further strategies to promote a targeted approach to impact planning in research projects using datasets such as the 45 and Up Study would help guide researchers in achieving impact.

Introduction

Researchers have long been producers and disseminators of research, aiming to achieve benefits for society that lie beyond academia. The potential impact of research on policy and practice is broad and far-reaching. The impact of research for the wider population can be observed through the implementation of evidence-informed health policy that can improve people's quality of life and save lives: the Sabin vaccine for polio, measles vaccination, and smoking cessation programs to name a few.

Hundreds of billions of dollars are spent annually on research and development – with an estimated A\$23.1 billion spent in 2018 in Australia alone.¹ However, a consistent finding from clinical and health services research is that research is not translated into policy and practice in a timely manner.^{2,3} This resulting evidence-to-practice gap exposes patients to inappropriate care and unnecessary treatments, resulting in high costs and resource wastage.⁴ More broadly, policymakers and program managers report that research is often not timely, relevant or actionable, and opportunities to integrate research into decision making are missed.

Gaps between evidence and practice have been attributed to multiple factors. Policy makers cite a lack of timely, relevant research, its limited applicability to policy contexts, and insufficient organisational access to academic journals as barriers to using evidence in their policies.^{5,3} The discordance between evidence and practice may lead to research wastage, e.g. research questions that are irrelevant to decision makers, clinicians and patients, poorly designed studies, biased or unusable reports of research and failing to describe interventions adequately.^{6,2}

Researchers say that institutional priorities lie with academic metrics, such as journal articles published and conferences attended and often limit access to relationship-building with non-academic actors.⁷ They are not given the time, training, or incentive to effectively engage with policy makers and communicate the information that policy makers require.^{8,9} Furthermore, research evidence is identified as only one of many factors that influence policy, with others including policy makers' values, other sources of information, political ideologies, stakeholder interests, policy drivers, and personal experience.¹⁰

Large longitudinal cohort studies, such as the Sax Institute's 45 and Up Study, can play a significant role in providing high-quality evidence for decision making relating to policy and practice.¹¹ Cohort studies and linked data are one way of generating research that is relevant to policy makers and practitioners. They provide

a powerful tool for understanding the changes in health, health behaviours and the living circumstances of the population over time; the interactions and cumulative effects of factors that affect their health; and the real-world impact of population-level programs and policies.¹² Using existing datasets such as data registries, linked databases, and population cohorts is an efficient way to investigate research questions because they enable analyses of multiple data points.¹³ These data have the potential to generate timely, relevant research that may directly impact the health of the population it seeks to improve.

Linked data from the 45 and Up Study is accessible to researchers, government and nongovernmental bodies¹² and was collected to provide high-quality data to generate policy-relevant information.¹¹ More than 660 researchers have used data from the study since it commenced in 2006.¹¹ This is the first examination of researchers' intended policy or practice impact, where the impact was achieved and how researchers achieved it. A better understanding of how researchers currently think about and plan for policy and practice impact will help identify strategies that support researchers to do this.

The aims of this study were to identify: 1) the proportion of researchers who intended to have an impact and achieved impact, 2) the types of impact they intended and achieved and 3) the pathways through which they achieved it.

A detailed understanding of researchers' practice will assist in developing strategies to promote policy and practice impacts and the ways they can be measured in research projects such as the 45 and Up Study.

Methods

Study design

This study is a document review of research project applications, progress reports and final reports submitted by project investigators as part of the 45 and Up Study mandatory reporting requirements.

It compared application forms (where the researchers specified their intended impact) with progress and final reports (where the researchers identified the impact of their work).

The UNSW Human Research Ethics Committee determined that ethics approval was not required for this document review.

Data collection

The data were de-identified by the 45 and Up Study administrators and provided for this document review. Research projects were included in the study if they commenced and were completed between 1 January 2011 and 31 December 2017, where forms were uniform, used a standard format, and included sufficient documentation for analysis (i.e. an application form and one or more progress or final reports). Data on self-reported impact were extracted at three stages in the reporting period: when researchers submitted application, progress, and final reports. The application and progress report data were both tick boxes (in the categories given) and free text (e.g. to provide more details about the expected or final impact of research). Data were categorised to capture policy and practice impact aspects, as detailed in Appendix A, available from figshare.com/articles/journal_contribution/Appendix_A_pdf/19710931.

A coding schedule was developed based on recent work in understanding research use and impact from researchers and funding organisations.^{10,14-18} Data on the nine National Health Priority Areas (NHPAs) addressed by the research projects were also extracted to focus on research areas that Australia has prioritised.¹⁹

The coding schedule defined and categorised the data by type of policy or practice impact, method of achieving research impact ('pathway'), and target audience (see Appendix A, available from figshare.com/articles/journal_contribution/Appendix_A_pdf/19710931). Following Cohen, et al.¹⁵, the coding schedule differentiated between academic outputs or outcomes and those related to policy and practice. Unlike Cohen, we included proximal indicators in our definition of policy or practice change (i.e. any indication that the researchers sought to change, influence, inform, develop or evaluate policy or practice). Under policy and practice impact, we included categories that focused on changes or development to policies and programs, clinical practice or processes, clinical guidelines, health service delivery organisations systems, commercial arrangements and legislation.

Under pathways to impact (how policy or practice impact would be achieved), we included meetings and interaction with policy makers, co-designing research, lobbying and advocacy, journal article publications and conference presentations, teaching and training, plain English resources, discussion papers and reports, media and social media.

Target audiences (with whom findings would be shared) included ministers and ministerial officers, policy makers and program managers, hospital or health service administrators, health practitioners or clinicians, patients or families, consumer organisations, and journalists.

Investigators EF and GM developed and pilot-tested the schedule. To ensure further robustness and reduce partiality, a drift process was conducted in which a

random sample of 10% of the research projects EF coded were re-coded by GM. An inter-rater reliability score of 90% was achieved.

Data analysis

Intended impact data were collected and analysed from application forms and were treated as baseline data, as they were submitted at the beginning of the research project. Impact data were identified from progress and final reports and considered as impact achieved.

Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 25 (IBM, 2017). Descriptive statistics and cross-tabulations were used to create tables and figures.

Results

Twenty-eight projects initially met the inclusion criteria. On further examination, three of these studies were excluded as one project was outside the inclusion dates (finishing after 2017), one only provided an application report, and one only provided a progress report. A total of 25 research projects were included in this study.

Project applications addressed 11 research areas with multiple responses possible, resulting in 36 total responses regarding research areas covered by projects. Just over half (53%, $n = 19$) of total responses included an NHPA: cancer control (22%, $n = 8$); mental health (8%, $n = 3$); obesity/physical activity (8%, $n = 3$); cardiovascular health (8%, $n = 3$); asthma and respiratory conditions (3%, $n = 1$); and arthritis and musculoskeletal health (3%, $n = 1$). No other NHPAs were identified in the project applications. Non-NHPA research areas identified include smoking (6%, $n = 2$), alcohol use (3%, $n = 1$), ageing (3%, $n = 1$), autoimmune disorders (3%, $n = 1$) and gender (3%, $n = 1$). Some projects addressed health systems issues such as preventable hospitalisations and waiting times (11%, $n = 4$), and others included a focus on broader influences such as socioeconomic status (8%, $n = 3$), housing (6%, $n = 2$) and health inequalities (3%, $n = 1$). One study examined statistical methods (3%, $n = 1$).

Twenty-two (88%) project applications mentioned an intention to achieve one or more policy or practice impacts. That is, those that stated an intention to achieve policy and practice impacts could nominate an intention to achieve in multiple areas. Of all responses regarding types of intended policy and practice impacts ($n = 29$), 52% ($n = 15$) planned to change a policy or program; followed by health service delivery (21%, $n = 6$); a clinical practice or process (17%, $n = 5$); a clinical guideline or manual (7%, $n = 2$); or an organisational system or process (3%, $n = 1$) (see Table 1).

Table 1. Researchers' intentions to achieve policy or practice impact from 45 and Up Study research projects

Question	Categories	Number of applications
Mentioned intention to achieve impact	Yes	22
	No	3
Type of policy or practice impact intended (<i>n</i> = 22) ^a	Change to a policy or program	15
	Change to health service delivery	6
	Change to clinical practice/process	5
	Change to clinical guideline/manual	2
	Change to organisational system	1
	Change to commercial arrangement	0
	Change to legislation	0
Mentioned an intended pathway to achieve impact (<i>n</i> = 22)	Yes	12
	No	10
Intended pathway (<i>n</i> = 12)	Academic	3
	Policy-oriented	3
	Both academic and policy-oriented	6
Types of pathway to impact intended ^a	Academic	
	Conferences or journal publications	9
	Teaching, seminars or webinars	1
	Policy-oriented	
	Discussion papers, reports or plain English summaries	5
	Interaction with policymakers and advocacy	5
	Designing research with policymakers	3
	Other	2
Mentioned intended target audience	Yes	8
	No	14
Types of intended audience (<i>n</i> = 15)	Policy makers/program managers	3
	Patients and families	3
	Health practitioners or clinicians	2
	Health service administrators	2
	Ministers	1
	Journalists	0
	Consumer groups	0
	Other	4

^a Respondents could provide multiple responses

Intended pathways for achieving impact are presented in Table 1. Of the 22 research projects which intended to have impact, 10 (45%) did not identify a pathway for achieving impact. Of the 12 which did report a pathway, 25% (*n* = 3) intended to use academic means only (i.e. publishing in academic journals and teaching via seminars and webinars). A further 25% (*n* = 3) intended to use policy-oriented activities only (i.e. discussion papers and plain English summaries, co-designing research, and interaction with policy makers or advocating for change), and the remaining 50% intended to use a combination of academic and policy-oriented methods.

Of the 22 research projects which mentioned an intended impact, the majority (64%, *n* = 14) did not nominate a specific intended audience (see Table 1). The remaining eight projects identified one or more audiences from the types of intended audience, with a total of 15 responses. These included policy makers or program managers (*n* = 3, 20%), patients and families (*n* = 3, 20%), health practitioners or clinicians (*n* = 2, 13%), hospital or health service administrators (*n* = 2, 13%); and a government minister (*n* = 1, 7%). The following audiences were nominated in the 'other' option: non-government (*n* = 2), 'stakeholders' (*n* = 1) and the

Table 2. Types of output from research projects
 (N = 25)

Question	Responses	Number of Research Projects
Journal articles planned	None	14
	4 or less articles	9
	More than 4 articles	2
Journal articles published	None	13
	4 or less articles	9
	More than 4 articles	3
No journal articles published or planned		6
Conference presentations given	None	18
	4 or less presentations	5
	More than 4 presentations	2
Policy-oriented publications published	None	22
	4 or less publications	3
	More than 4 publications	0
Media reports and events held	None	18
	4 or less media events	6
	More than 4 media events	1

organisation conducting the research ($n = 1$). (see Table 1). No project mentioned journalists, consumers or consumer organisations as an audience.

Forty-four percent ($n = 11$) of all the research projects studied reported publishing at least one journal article, and 56% ($n = 14$) described planning at least one journal article. Nearly one-quarter of the research projects reported neither preparing nor publishing a journal article. Fewer projects reported other outputs: 28% of all 25 projects ($n = 7$) reported conducting a conference presentation, 28% ($n = 7$) reported engaging with the media about their research (e.g. news articles, radio mentions, social media posts) and 12% ($n = 3$) research projects reported publishing other materials (e.g. reports, book chapters) (see Figure 1).

Of the 22 research projects that intended to have a policy or practice impact, four (18%) reported achieving an impact (see Figure 2). Four reported changes to policy, and one also reported change to legislation. Two of the four research projects described how they achieved these impacts: through interaction with a policy maker ($n = 1$); dissemination of findings in a journal article or at a conference ($n = 1$); or in a report or discussion paper ($n = 1$). Note that one project described two

pathways to achieving impact. Target audiences for the reported results included journalists ($n = 3$), ministers ($n = 1$), policy makers ($n = 1$), hospital or health service administrators ($n = 1$), and clinicians ($n = 1$).

Discussion

To our knowledge, this is the first study in Australia that explores the type of impact planned and achieved in research projects from a large-scale prospective cohort study, the 45 and Up Study. The largest cohort study in the Southern Hemisphere, the 45 and Up Study, is accessed by over 660 researchers. Given the increasing interest in Australia and internationally to identify, define, and measure research impact, it is timely to describe the type of impact intended and achieved by researchers using the 45 and Up Study data.

While our study reflects a strong interest among researchers in having a policy or practice impact, few researchers nominated how they would achieve this. A limited number of studies have directly examined the impact of research on policy and practice²⁰⁻²². Some research organisations and national funding bodies are developing schemas to define and quantify research impact to expand the focus on academic outputs only. Despite the growing expectation, these initiatives are yet to impact researchers' practice in real-world settings.²⁰⁻²² Boulding et al. found that public health research contributes substantially to impact beyond academia.²² Pathways to impact include contributing to debates on what constitutes appropriate evidence for national policy change, building relationships with stakeholders across a range of health and non-health sectors and collaborating with local authorities. Newson et al.²⁰ found that policy and practice impacts were related to significant intervention effects, the nature of the intervention and the publication of results. Whereas Read et al. found that professional networks were the most effective means of research dissemination.²¹ Also of note is the infrequent mention of interactive strategies to facilitate the translation of research findings into practice, although the concept is not new. An examination of researchers' needs and a better understanding of the obstacles they experience in this regard would be beneficial in designing strategies to address these needs, including actively engaging with policymakers and practitioners.

The results indicate that researchers are interested in using the 45 and Up Study data to achieve impact. Indeed our study indicates that the majority of research projects in our sample intended to achieve policy or practice impact (88%; $n = 22$). By the end of the reporting period, some of those projects had reported a policy or practice impact (18%, $n = 4/22$). However, this analysis has shown that their capabilities to deliver impact could be improved.

There are several reasons for this difference between intention and achievement of impact. Firstly, the reporting

Figure 1. How policy or practice impact was achieved

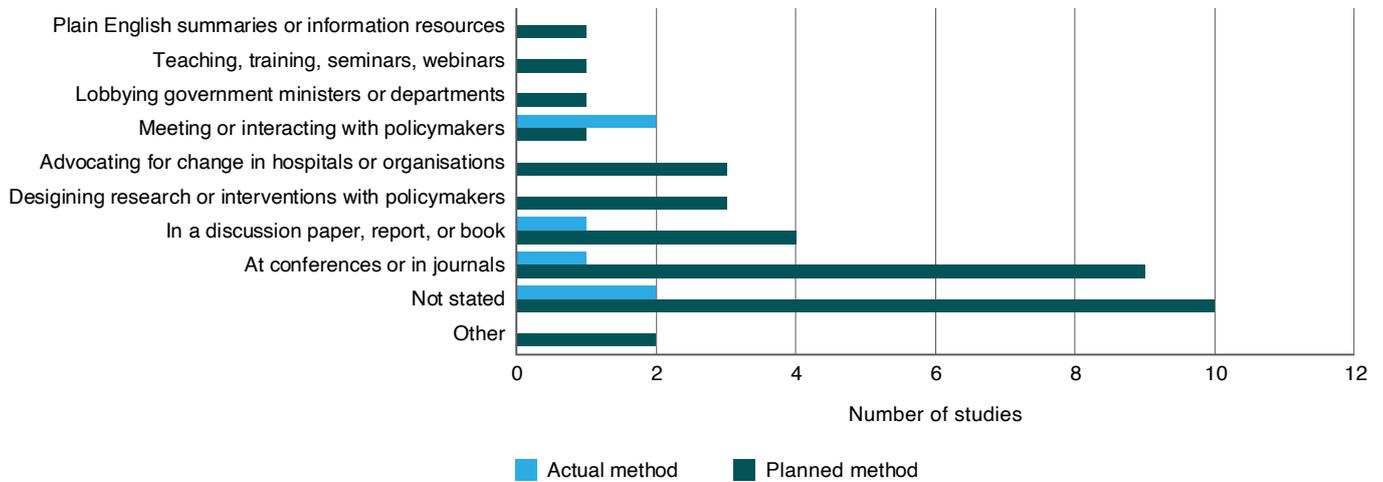
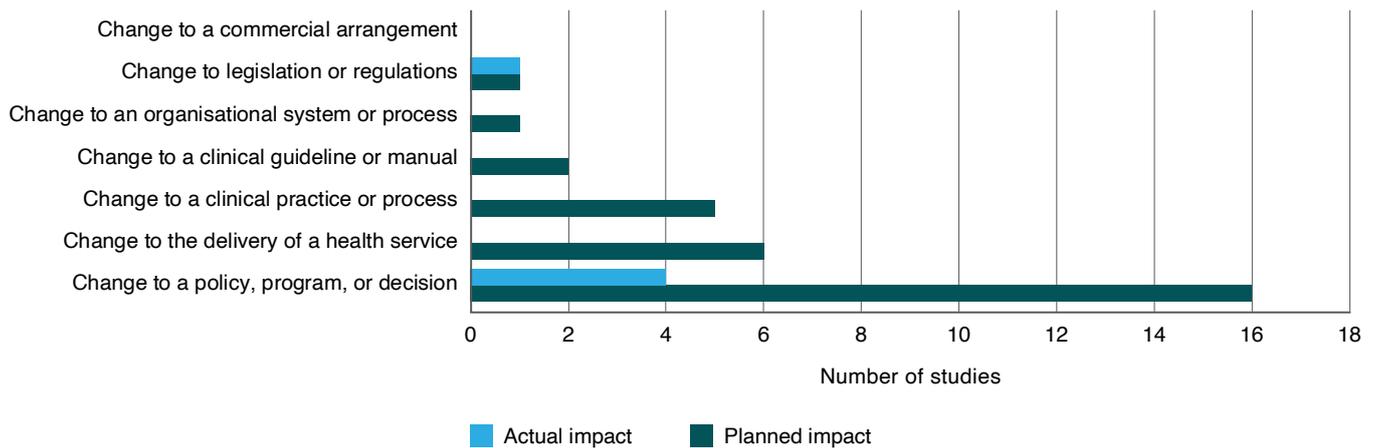


Figure 2. Did researchers achieve the type of impact they planned^a?



^a Some projects achieved more than one type of impact

period used in this study to assess impact, ends at the completion of the respective projects, while achieving impact is more likely to occur well after the completion of a study.²⁰ Secondly, without validation of the stated impacts on policy and practice, it is unclear whether the coding schedule captured all the impact achieved within the reporting period; reliance on self-reporting here is not ideal. Lastly, although the *a priori* codes were developed to reflect Cohen and colleagues' (2015) framework¹⁵, the 45 and Up Study report templates did not necessarily concur with the same definitions, creating the potential for a theoretical mismatch.

The methodological limitations in this paper were that the research project application, progress and final reports were completed for the data custodian and therefore, authors may not list a lot of detail on the impact planned and achieved. Further, a researcher's understanding of impact may differ from that of policy makers.

There indeed appears to be little in the way of dissemination of information from the research project findings. This is very likely an artefact of timing, methodology and the nature of a routine report to a data custodian. As these are required, not all information on planned or achieved impact may be included in sufficient detail. A researcher's understanding of impact may be different from that of a policy maker; hence, the impact planned and achieved may not be reported. For projects that did not include a final report, we considered the last progress report as the final report, and it is possible that the impact achieved was not included in these progress reports. Finally, achieving impact takes time and most likely occurs well after the project has been completed, hence not being captured in our study.

Despite these limitations, the results of this study seem to indicate that while researchers intended to have an impact through policy-oriented and academic pathways, research practice is still skewed towards traditional

intellectual outputs among the 45 and Up Study research projects examined. While 48% of the sample ($n = 12$) reported publishing at least one journal article, few reported producing policy-oriented publications ($n = 3$, 12%) or engaging with the media about their research ($n = 7$, 28%). The literature reports several barriers to engaging in these policy-oriented activities, including a lack of organisational support and individual capacity.⁸

This study indicates a disconnect between the strategies researchers employ to inform the targeted end-users about the knowledge produced to assist with their decision-making process. It also demonstrates the need for further investigation into researchers' processes of planning for impact and the facilitators and barriers they encounter. Therefore, a follow-up study currently underway consists of semi-structured qualitative interviews with the lead researchers to better identify barriers and facilitators to research impact, to use those insights to promote policy better and practice impact for those using the 45 and Up Study dataset.

It appears that researchers would benefit from forward impact planning. One strategy to improve impact is to have a more targeted impact plan considering the audience's type and preferred method of accessing evidence. Planning for research impact could consider proactive approaches, engaging with policy makers and practitioners and identifying their preferred ways of accessing evidence. Planning could also redress an overemphasis on academic outputs and enable the delivery of impacts in policy and practice.

Conclusion

The majority of researchers in our study intended their research project to have policy and practice impact. While some researchers intended to reach policy and practice audiences, most did not seem to consider the needs or preferences of their knowledge users and had no established strategies to engage with them. The lack of a targeted approach to knowledge mobilisation is one of the most common barriers identified in the literature to achieving real-world impacts.

These findings suggest that 45 and Up Study researchers, and potentially researchers more broadly, may benefit from a more targeted approach to impact planning. There is a discordance between 'intention to have impact' and 'achieving impact' and further studies are required to elucidate why this is the case.

Acknowledgements

We would like to thank Emeritus Professor Bruce K Armstrong for his support and insights in developing this project.

The 45 and Up Study is managed by the Sax Institute in collaboration with major partner Cancer Council NSW; and partners: the Heart Foundation; NSW Ministry

of Health; NSW Department of Communities and Justice; and Australian Red Cross Lifeblood; author MM is Chief Investigator of the 45 and Up Study.

Peer review and provenance

Externally peer-reviewed, not commissioned.

Competing interests

None declared.

Author contributions

TH, MM conceived the study. TH, GM and MM developed the methods for the study. TH, GM and LM wrote the manuscript. GM and EF extracted and analysed the data. GM interpreted the study data. TH had oversight of the project.

References

1. Desjardins J. Visualizing how much countries spend on R&D. US: Visual Capitalist; 2018 [cited 2022 Apr 12]. Available from: <https://www.visualcapitalist.com/money-country-puts-r-d/>.
2. Gunn A, Mintrom M. Measuring research impact in Australia. *Australian Universities' Review*. 2018;60:9–15.
3. van de Goor I, Hämäläinen R-M, Syed A, Juel Lau C, Sandu P, Spitters H, et al. Determinants of evidence use in public health policy making: Results from a study across six EU countries. *Health Policy*. 2017;121(3): 273–81.
4. Grimshaw JM, Eccles MP, Lavis JN, Hill SJ, Squires JE. Knowledge translation of research findings. *Implement Sci*. 2012;7:50.
5. Oliver K, Innvar S, Lorenc T, Woodman J, Thomas J. A systematic review of barriers to and facilitators of the use of evidence by policymakers. *BMC Health Serv Res*. 2014;14:2.
6. Deeming S, Searles A, Reeves P, Nilsson M. Measuring research impact in Australia's medical research institutes: a scoping literature review of the objectives for and an assessment of the capabilities of research impact assessment frameworks. *Health Res Policy Syst*. 2017;15(1):22.
7. Gordon LG, Bartley N. Views from senior Australian cancer researchers on evaluating the impact of their research: results from a brief survey. *Health Res Policy Syst*. 2016;14:2.
8. Kothari A, McLean L, Edwards N. Increasing capacity for knowledge translation: Understanding how some researchers engage policy-makers. *Evidence & Policy*. 2009;5:33–51.

9. Otten JJ, Dodson EA, Fleischhacker S, Siddiqi S, Quinn EL. Getting research to the policy table: a qualitative study with public health researchers on engaging with policy makers. *Prev Chronic Dis.* 2015;12:E56.
10. Redman S, Turner T, Davies H, Williamson A, Haynes A, Brennan S, et al. The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy. *Soc Sci Med.* 2015;136-137:147–55.
11. Sax Institute. About the 45 and Up Study. Sydney: Sax Institute; 2017 [cited 2022 Apr 12]. Available from: www.saxinstitute.org.au/our-work/45-up-study/
12. Banks E, Redman S, Jorm L, Armstrong B, Bauman A, Beard J, et al. Cohort profile: the 45 and up study. *Int J Epidemiol.* 2008;37(5):941–7.
13. Brook EL, Rosman DL, Holman CD. Public good through data linkage: measuring research outputs from the Western Australian Data Linkage System. *Aust N Z J Public Health.* 2008;32(1):19–23.
14. Boswell C, Smith K. Rethinking policy 'impact': four models of research-policy relations. Palgrave Communications. 2017;3:44.
15. Cohen G, Schroeder J, Newson R, King L, Rychetnik L, Milat AJ, et al. Does health intervention research have real world policy and practice impacts: testing a new impact assessment tool. *Health Res Policy Syst.* 2015;13:3.
16. Deeming S, Searles A, Reeves P, Nilsson M. Measuring research impact in Australia's medical research institutes: a scoping literature review of the objectives for and an assessment of the capabilities of research impact assessment frameworks. *Health Res Policy Syst.* 2017;15(1):22.
17. Milat AJ, Bauman AE, Redman S. A narrative review of research impact assessment models and methods. *Health Res Policy Syst.* 2015;13:18.
18. Newson R, King L, Rychetnik L, Milat A, Bauman A. Looking both ways: a review of methods for assessing research impacts on policy and the policy utilisation of research. *Health Res Policy Syst.* 2018;16(1):54.
19. Australian Government, National Health and Medical Research Council strategic direction 2015–16 to 2018–19: working to build a healthy Australia. Canberra. In: NHMRC, editor. Australia 2015. p. 1–6 [cited 2022 Apr 12]. Available from: www.nhmrc.gov.au/file/2431/download?token=QFhimq2T
20. Newson R, King L, Rychetnik L, Bauman AE, Redman S, Milat AJ, et al. A mixed methods study of the factors that influence whether intervention research has policy and practice impacts: perceptions of Australian researchers. *BMJ Open.* 2015;5(7):e008153.
21. Reed RL, McIntyre E, Jackson-Bowers E, Kalucy L. Pathways to research impact in primary healthcare: What do Australian primary healthcare researchers believe works best to facilitate the use of their research findings? *Health Res Policy Syst.* 2017;15(1):17.
22. Boulding H, Kamenetzky A, Ghiga I, Ioppolo B, Herrera F, Parks S, et al. Mechanisms and pathways to impact in public health research: a preliminary analysis of research funded by the National Institute for Health Research (NIHR). *BMC Med Res Methodol.* 2020;20(1):34.