

How much is invested in obesity prevention in Australia? An analysis of major research and Federal Government funding, 2013–2022

Huong Ngoc Quynh Tran^{a,b,c}, Moosa Al Subhi^{a,b}, Nicole Ward^{a,b}, Phuong Nguyen^{a,b}, Marufa Sultana^{a,b}, Jaithri Ananthapavan^{a,b} and Vicki Brown^{a,b}

^a Deakin Health Economics, Institute for Health Transformation, Deakin University, Geelong, Victoria, Australia

^b Global Centre for Preventive Health and Nutrition, Institute for Health Transformation, Deakin University, Geelong, Victoria, Australia

^c Corresponding author: michelle.tran@deakin.edu.au

Article history

Publication date: 4 April 2024

Citation: Tran HNQ, Al Subhi M, Ward N, Nguyen P, Sultana M, Ananthapavan J, Brown V. How much is invested in obesity prevention in Australia? An analysis of major research and Federal Government funding, 2013–2022. *Public Health Res Pract.* 2024;34(1):e3412404. <https://doi.org/10.17061/phrp3412404>

Key points

- The funding landscape for obesity prevention research in Australia is diverse, with involvement from various institutions and research areas
- Federal Government Budget allocations generally focus on population health and wellbeing, rather than specifically targeting obesity prevention
- Funding for obesity prevention should be strategic and consistent to enable full realisation of effective and cost-effective initiatives

Abstract

Objective and importance of study: Overweight and obesity are the second leading risk factors for death and non-communicable disease in Australia. This study aimed to examine the Australian Federal Government funding landscape for population-level obesity prevention from 2013 to 2022.

Study type: A retrospective analysis and narrative synthesis of publicly available data on obesity prevention funding from the Federal Government and major federally funded Australian research organisations.

Methods: Searches were conducted of Australian Federal Government Budget documents and funding announcements from the National Health and Medical Research Council (NHMRC), Australian Research Council (ARC) and Medical Research Future Fund (MRFF). Funding allocations targeting obesity prevention, or the prevention of risk factors associated with obesity, were included. These were determined by the presence of keywords related to obesity, unhealthy diet, physical activity and sedentary behaviour. Data were extracted verbatim, coded and narratively synthesised by funding source.

Results: From 2013 to 2022, 186 funding allocations for obesity prevention in Australia were identified, totalling approximately A\$778 million. The proportion of funding allocated to obesity prevention compared to the total annual budget of each funding source was relatively low: NHMRC = 1.1%; ARC = 0.2%; MRFF = 0.8%; Federal Government = 0.1% (of health budget). Funding for obesity prevention initiatives fluctuated over time.

Conclusions: Findings underscore the need for strategic and ongoing funding allocation to support obesity prevention research, implementation and sustainment of evidence-based obesity prevention initiatives in Australia.

Introduction

Australia is among the countries with the highest obesity rates in the world.¹ Overweight and obesity are associated with higher health risks for non-communicable diseases and result in increased healthcare costs.² Overweight and obesity cost the Australian economy approximately A\$11.8 billion in 2018. Prevention is key to halting the rise in overweight and obesity.³⁻⁵

Overweight and obesity is considered a societal issue that is socioeconomically patterned, and driven by systemic environmental factors.⁵⁻⁷ It requires sufficient and consistent investments in synergistic, sustained and multifaceted population-level interventions to address the complexity of determinants.⁸ The flow of funding for obesity prevention in Australia involves multiple levels of government and community agencies.⁹ However, Federal Government leadership is pivotal in addressing overweight and obesity in Australia because it helps to set the agenda for jurisdictions and provides high-level guidance to industry and the public.^{10,11}

The Australian Federal Government recently developed the National Obesity Strategy 2022–2032, a 10-year framework for action to prevent and reduce obesity.³ It aims to create a supportive healthy living environment, empower Australians to stay healthy, and improve access to early intervention and care.³ A key limitation is the lack of funding committed to its implementation.^{3,12} Adequate funding across various areas is essential in achieving the objectives of the framework. Investment in research is pivotal in advancing understanding of obesity prevention, identifying cost-effective prevention strategies for scaled-up implementation, and evaluating their impacts.¹³ Investment in implementation is also critical, to improve adoption and sustainability of evidence-informed practices.¹⁴

Given the leadership role of the Australian Federal Government in a national and coordinated approach to prevention^{3,10,15}, this paper aims to examine federally funded obesity prevention initiatives in Australia from 2013 to 2022. Understanding how governments invest in obesity prevention can help identify areas where funding may be lacking.

Methods

This review is a retrospective analysis of publicly available funding summaries from the three largest federally funded Australian research bodies: National Health and Medical Research Council (NHMRC), Australian Research Council (ARC) and the Medical Research Future Fund (MRFF), as well as Federal Government Budget documents. This review covered the timeframe from 2013 to 2022 to align with available NHMRC, ARC and MRFF funding announcements and Federal Government Budget documents. The MRFF was established in 2015,

and funding announcements were available from 2017 onwards. This study examined MRFF funding allocations from 2017 to 2022. Application of inclusion/exclusion criteria and data extraction for the included references were undertaken by one reviewer and 40% were cross-checked by a second reviewer. Discrepancies were discussed and, if needed, the senior researcher made the final decision.

Methodology for inclusion

NHMRC, ARC and MRFF funding data were downloaded from publicly available websites (www.nhmrc.gov.au/funding/data-research/outcomes¹⁶; dataportal.arc.gov.au/Landing¹⁷; health.gov.au/summary-of-mrff-grant-recipients¹⁸) into Microsoft Excel 365 for screening (Appendix 1, available from: figshare.com/s/438d513718d9b37f1180). Federal Government 'Budget paper 2: budget measures series' documents¹⁹ give detailed information on funding allocation per budget year.

Keyword searches of obesity and obesity risk factor terms were used to identify relevant funding allocations (Appendix 1, available from: figshare.com/s/850f035b7a6d72c9a81e). Funding allocations were included if they were related to obesity prevention (i.e., keywords related to obesity mentioned in the title and/or summary description) or the prevention of obesity-related risk factors (i.e., keywords related to unhealthy diet, physical inactivity, sedentary behaviour mentioned in the title and/or summary description). Funding allocations were excluded if they were: 1) clinical or basic science research projects; 2) treatment or prevention interventions in clinical groups; or 3) allocated to diseases or areas other than obesity prevention. Funding allocations addressing physical inactivity were included if they were for population health promotion programs or initiatives to improve physical activity, reduce sedentary behaviours, or for elite sports. Elite sports were included given investments into elite sports were often seen by policymakers as a way to promote sport participation among the general population.^{20,21} Funding allocations for elite sports were presented separately. Funding allocations to improve infrastructure for physical activity broadly were included, as they facilitate community participation in physical activities. Funding allocations addressing unhealthy diets were included if they were for population-level healthy eating programs or nutrition frameworks/policies to encourage healthy diet.

Data extraction and synthesis

The data available by funding source varied (see Appendix 2, available from: figshare.com/s/438d513718d9b37f1180). Summary descriptions were coded by two reviewers using an author-designed coding framework (see Appendix 3, available from: figshare.com/s/438d513718d9b37f1180). Funding was coded as having a specific focus on obesity if allocations

mentioned obesity in their summaries; otherwise, they were coded by the risk factor/s mentioned (diet, physical activity/sedentary behaviour [PA/SB], or multiple risk factors). The authors verbatim-coded the target population when available; otherwise, it was considered not reported.

Data extraction and synthesis: major Australian research funding bodies

Data extracted from NHMRC funding announcements included: 1) application identification number; 2) date announced; 3) the name of the Chief Investigator; 4) funding allocation type and subtype; 5) title; 6) administering institution; 7) state where the administering organisation is based; 8) total amount funded; 9) broad research area; 10) fields of research (FOR); 11) five research keywords; and 12) summary description of the research project. The 2014 NHMRC funding allocations did not include a summary description; therefore, data coding was based on other details available, such as the funding allocation title, broad research area, or FOR categories. NHMRC funding was grouped into six categories, based on scheme: 1) Centres of Research Excellence; 2) Partnership Projects; 3) Ideas Grants; 4) Fellowships; 5) Project grants; and 6) others (see Appendix 4, available from: figshare.com/s/438d513718d9b37f1180).

Data extracted from ARC funding announcements included: 1) code; 2) program and scheme name; 3) funding commencement year; 4) title; 5) summary descriptions; 6) lead investigator; 7) funding allocation value; and 8) FOR. ARC funding allocation types were grouped into two categories, based on scheme: 1) Discovery Program; and 2) Linkage Projects (see Appendix 4, available from: figshare.com/s/438d513718d9b37f1180). Data extracted from MRFF funding announcements included: 1) MRFF initiative; 2) year; 3) organisation; 4) type of funding allocation; and 5) total funding.

We undertook narrative synthesis of data by research funding organisation, scheme and year. Frequencies of the following data were estimated: 1) funding allocation type (NHMRC), program and scheme name (ARC), or initiative and funding allocation type (MRFF); 2) funding allocations with a specific focus on obesity; 3) funding allocations with a specific focus on risk factor(s); 4) target population; 5) administering organisation; 6) FOR (NHMRC, ARC); and 7) research keywords (NHMRC). MRFF funding allocations did not report FOR or research keywords (See Appendix 4, available from: figshare.com/s/438d513718d9b37f1180).

Data extraction and synthesis: Australian Federal Government Budget documents

Data extracted from Federal Government Budget documents¹⁹ included: 1) year; 2) total amount of funding

for the program or initiative as stated; and 3) funding duration (See Appendix 8, available from: figshare.com/s/438d513718d9b37f1180). Data was synthesised by budget year. Given budgets are annual, and some programs were funded over multiple years, there were instances where overlapping funding periods occurred. To account for these overlaps, the amount of funding allocated to each program or initiative within each budget announcement was calculated by averaging the funding amount across the budget documents that shared the overlapping periods. Frequencies of the following data were estimated and reported: 1) funding allocations with a specific focus on obesity; 2) funding allocations with a specific focus on risk factor(s); and 3) target population.

Results

From 2013 to 2022, there were 186 funding allocations for obesity prevention, totalling approximately A\$778 million across all major research funding bodies and the Federal Government. The proportion of funding allocated to obesity prevention compared to the total budget of each funding body was relatively low, averaged at 0.6%: NHMRC = 1%, ARC = 0.2%, MRFF = 1%, Federal Government = 0.1% of the total health budget (Table 1; Figure 1; Appendix 9, available from: figshare.com/s/438d513718d9b37f1180).

NHMRC funding allocations

The NHMRC awarded 9751 funding allocations across all diseases and research areas, amounting to A\$7.9 billion. Of these, 104 funding allocations totalling A\$88 million had a focus on obesity prevention ($n = 43$) and/or obesity-related risk factor(s) ($n = 61$) (Table 1; Figure 1; Appendix 5, available from: figshare.com/s/438d513718d9b37f1180).

The most popular keywords were physical activity ($n = 32$); and obesity ($n = 32$). The most common target populations were children and adolescents ($n = 37$), and priority populations ($n = 20$).

ARC funding allocations

There were 12 515 funding allocations awarded across all diseases and research areas, tallying A\$6.7 billion. A total of 29 funding allocations, amounting to A\$10 million, had a focus on obesity prevention ($n = 5$) and/or obesity-related risk factor(s) ($n = 24$) (Table 1; Figure 1; Appendix 6, available from: figshare.com/s/438d513718d9b37f1180). ARC funding allocations commonly targeted children and adolescents ($n = 8$).

MRFF funding allocations

There were 1155 funding allocations awarded across all diseases and research areas, totalling A\$2.7 billion. A total of 19 projects, amounting to A\$22 million had a focus on obesity prevention ($n = 7$) and associated risk factor(s)

Table 1. Summary of funding for obesity prevention and obesity-related risk factors from major Australian research funding bodies and the Australian Federal government

	Funding for obesity prevention by source					Total
	NHMRC ^a	ARC ^a	MRFF ^b	Total funding by research bodies	Federal Government ^a	Total research and Federal funding
	<i>N</i> (%) ^{c,d}	<i>N</i> (%) ^{c,d}	<i>N</i> (%) ^{c,d}	<i>N</i> (%) ^{c,d}	<i>N</i> (%) ^{c,d}	<i>N</i> (%) ^{c,d}
Total number of funding announcements	104 (1.1)	29 (0.2)	19 (1.6)	152 (0.6)	34 ^e	186
Total amount of funding (A\$M)	88 (1.1)	10 (0.2)	22 (0.8)	120 (0.7)	658 (0.1)	778 (0.1)
	<i>n</i> (%) ^{c,f}	<i>n</i> (%) ^{c,f}	<i>n</i> (%) ^{c,f}	<i>n</i> (%) ^{c,f}	<i>n</i> (%) ^{c,f}	<i>n</i> (%) ^{c,f}
Primary focus						
Obesity ^g	43 (41)	5 (17)	7 (37)	55 (36)	0 (0)	55 (30)
Diet	24 (23)	16 (55)	2 (11)	42 (28)	5 (15)	47 (25)
Physical activity/sedentary behaviour	31 (30)	5 (17)	7 (37)	43 (28)	25 (74)	68 (37)
Multiple risk factors	6 (6)	3 (10)	3 (16)	12 (8)	4 (12)	16 (9)
Target population						
General population	7 (7)	4 (14)	1 (5)	12 (8)	11 (32)	23 (12)
Adults (aged 18 years and older)	6 (6)	2 (7)	0 (0)	8 (5)	0 (0)	8 (4)
Children and adolescents	37 (36)	8 (28)	2 (11)	47 (31)	8 (24)	55 (30)
Priority populations ^h	20 (19)	3 (10)	11 (58)	34 (22)	6 (18)	40 (22)
Retailers/food companies	3 (3)	1 (3)	1 (5)	5 (3)	0 (0)	5 (3)
Care services	1 (1)	0 (0)	1 (5)	2 (1)	0 (0)	2 (1)
Athletes	0 (0)	0 (0)	0 (0)	0 (0)	7 (21)	7 (4)
General practitioners	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)	1 (1)
Did not report	30 (29)	11 (38)	3 (16)	44 (29)	1 (3)	45 (24)

ARC = Australian Research Council; A\$M = Australian dollars in million, 2022 value; MRFF = Medical Research Future Fund; NHMRC = National Health and Medical Research Council.

^a Funding period analysed was 2013–2022.

^b Funding period analysed was 2017–2022.

^c Total % might be greater than 100% due to rounding.

^d % of the total number of funding allocation announcements, and total amount of funding during the examined period.

^e The total number of funding allocation announcements was unavailable to estimate the %.

^f % of the total number of obesity-related funding allocation announcements.

^g Defined as specifically mentioning obesity in description.

^h Included populations of special focus, including disadvantaged populations and Aboriginal and Torres Strait Islander populations.

(*n* = 12) (Table 1; Figure 1; Appendix 7, available from: figshare.com/s/438d513718d9b37f1180). MRFF projects had a strong focus on priority populations (*n* = 11).

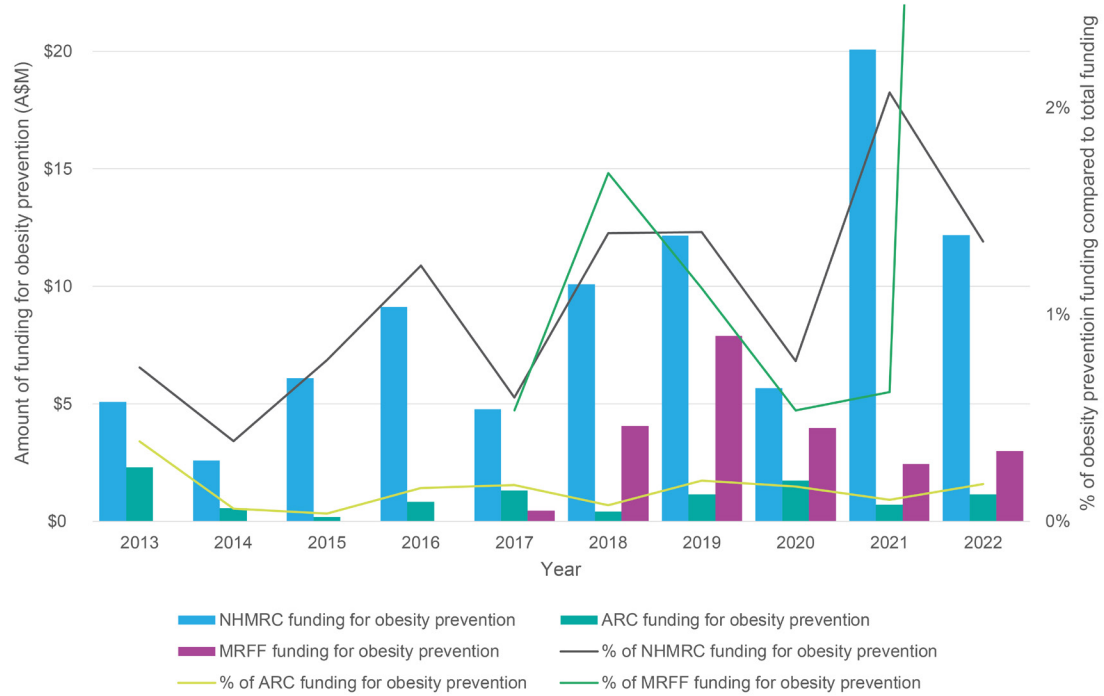
Federal Budget documents

From 2013 to 2022, the total Australian Federal Government health budget was approximately A\$761 billion. There were 34 funding allocations for 26 discrete obesity prevention initiatives

identified, amounting to A\$658 million (Tables 1–2; Figure 2; Appendix 8, available from: figshare.com/s/438d513718d9b37f1180). There was no mention of the keywords “obes*”, or “obesity”, or “overweight” in any of the Federal Budget documents examined.

There were no relevant funding allocations in two of the years examined (2015, 2020). Most of the obesity prevention initiatives addressed PA/SB (*n* = 19). Ten of the 19 PA/SB initiatives were for elite sports (i.e. athletes).

Figure 1. Funding from NHMRC^a, ARC^a, and MRFF^b for obesity prevention

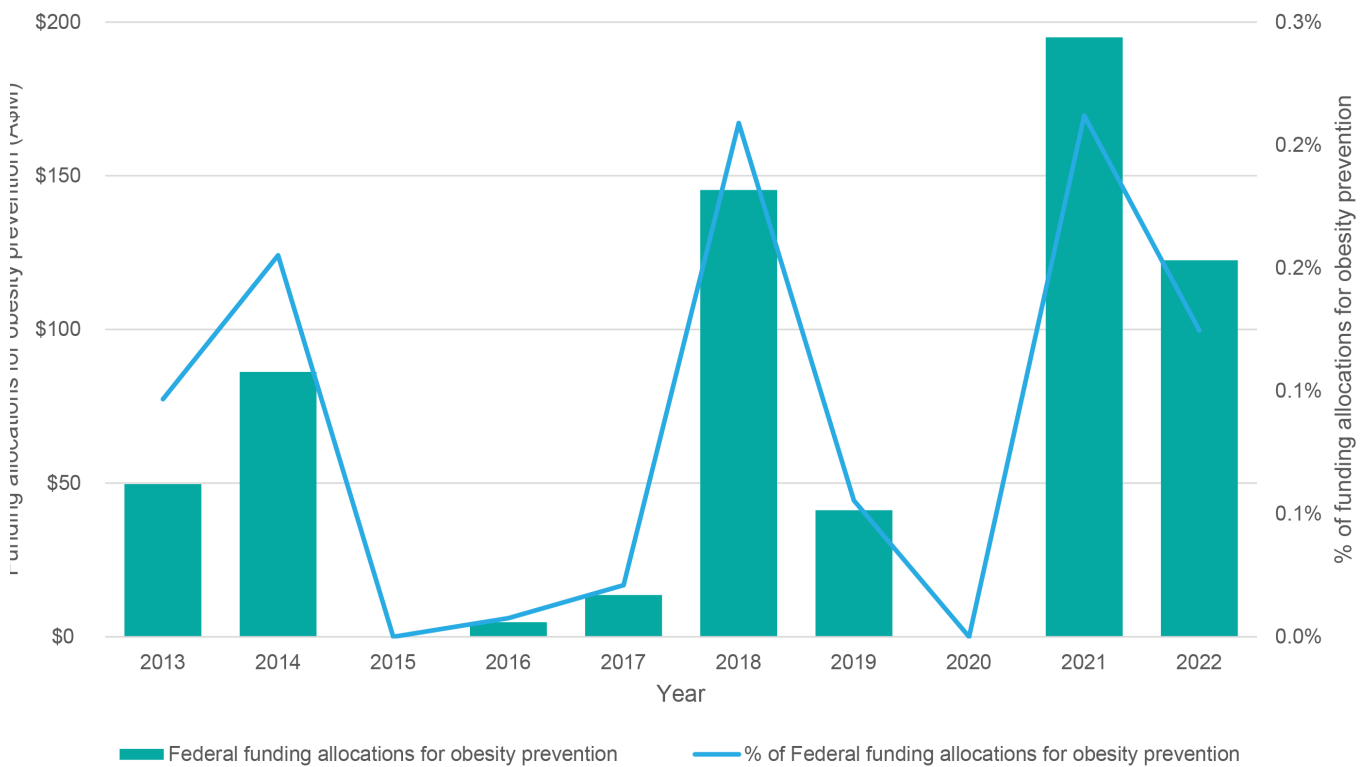


ARC = Australian Research Council; A\$M = Australian dollars in million; MRFF = Medical Research Future Fund; NHMRC = National Health and Medical Research Council;

^a Funding period analysed was 2013–2022.

^b Funding period analysed was 2017–2022.

Figure 2. Funding from the Australian Federal Government for obesity prevention, 2013–2022



A\$M = Australian dollars in million

The Federal Budget funding included two initiatives: 1) Sporting Schools to assist children to be more active at school; 2) Active After-School Communities program to provide structured PA programs. Other initiatives aimed to improve community sporting facilities, PA among older Australians, or community participation in sports. One initiative addressing diet as a risk factor was identified, the Health Star Rating System (A\$7.3 million), which aims to improve food labelling systems, and support its implementation.

Table 2. Funding from the Australian Federal Government for obesity prevention by target population, 2013–2022

Target population	Total Federal funding ^a , A\$M (%)
Athletes	188 (29)
General population	88 (13)
Children and adolescents	342 (52)
Priority populations ^b	35 (5)
General practitioners	5 (1)
Did not report	1 (0)
Total	658 (100)

AUD\$M = Australian dollars in million, 2022 value

^a Total might be different due to rounding

^b Included populations of special focus, including disadvantaged populations and Aboriginal and Torres Strait Islander populations.

Discussion

To our knowledge, this study is the first to synthesise obesity prevention funding from the NHMRC, ARC and Australian Federal Government Budget documents from 2013 to 2022, together with MRFF funding from 2017 to 2022. The findings can be used to advocate for prioritised funding for cost-effective obesity strategies, and to explore areas of obesity prevention that may lack adequate funding.

Obesity is associated with 8.4% of the total disease burden in Australia²², however our findings indicate that the financial resources committed to prevention are relatively low and have fluctuated over time. Given that the ARC funds non-medical fundamental and applied research, low funding awarded to obesity prevention research from the ARC was unsurprising. Previous studies that have examined historical funding from NHMRC, ARC and MRFF for other health issues and population groups have reported inadequate funding compared to their disease burden.^{23–26} In 2015, dental problems received 0.2% of NHMRC research funding, despite accounting for 4.4% of non-fatal burden.²³ Similarly, mental health research received 9.8% of NHMRC and MRFF funding in 2021, although its burden of disease was approximately

12.7%. A 2022 study found that nutrition research funding for at-risk populations was limited.²⁴ These findings raise questions about the amount of funding available for prevention in general, and more specifically, the efficient allocation of research funds to improve the health and wellbeing of all Australians.

Sustained progress towards halting the health and economic impacts of obesity relies on consistent funding for the development, evaluation, and successful and sustainable implementation of obesity prevention interventions.^{14,27} Given limited resources and competing priorities in preventive health, investment should prioritise evidence-based, cost-effective prevention initiatives.⁹ The call for increased and sustained funding in prevention, specifically in obesity prevention, stems from evidence suggesting that allocating preventive health resources to cost-effective initiatives can improve public health and might reduce overall spending, including spending on prevention.⁹ Several empirically validated obesity prevention interventions in various settings and age groups offer good value for money.²⁸ For example, the ACE-Obesity Policy study highlighted many interventions with substantial, long-term health gains and cost savings potential, but significant funding is needed for their implementation.²⁸

Many of the included funding allocations targeted children and adolescents. Strong links exist between shaping healthy lifestyles in early life and the potential in maintaining these behaviours into adulthood.^{29,30} Although focusing on childhood and adolescence is critical, further investment in cost-effective interventions across the life course is imperative.^{28,31} Only 12% of the funding allocations examined were population-wide strategies. This review indicated that approximately 22% of obesity prevention funding from NHMRC, ARC, MRFF and the Federal Government was allocated to priority populations including Aboriginal populations, women and children, the preconception and pregnancy period, and disadvantaged groups. When examining obesity prevention funding from NHMRC and ARC (not including other funding organisations such as the MRFF or Federal Government funding), approximately 14.8% of funding was dedicated to priority populations. This finding aligns with a recent review that found there is insufficient investment in nutrition research funded by the NHMRC and ARC for at-risk populations in Australia (approximately 14.5% of nutrition research from 2014 to 2021).²⁸ Priority populations face more barriers to healthy lifestyles and experience greater disease burden and healthcare costs compared to the general population; therefore, targeted prevention interventions are needed.^{10,24} Nearly one-third of Federal Government funding allocations (excluding NHMRC, ARC and MRFF) were for elite sport. Although it has been suggested that investing in elite sport could encourage more sports participation in the general population^{20,21}, a recent systematic review found no evidence supporting the effect of elite sport in increasing PA or sport

participation.³² Decision-makers should consider this evidence when allocating investments to improve PA levels in the general population.³²

The NHMRC regularly summarises its research funding statistics and data.³³ In the 2022 release, NHMRC funding awarded to obesity was higher than our findings (A\$271 million³⁴ compared with A\$88 million, from 2013 to 2022). There are several potential explanations for this difference. Firstly, the funding amount for obesity as reported by the NHMRC includes a range of research that we have not included, such as clinical, basic science, and biomedical research. This study focused on overweight and obesity prevention research and implementation, given that prevention is both important and cost-effective in halting the rise of overweight and obesity.³ Secondly, the NHMRC reports funding allocations across multiple topics (i.e., obesity and mental health) when they have either direct or broader focus on obesity, such as long-term potential impacts; therefore, the full funding amount was attributed to obesity without any specific proportioning among the different disease areas.³³

It was challenging to assert definite claims relating to the obesity prevention funding landscape in Australia compared with other countries, given the specific focus of this study. However, lessons can be learnt from the Australian experience. Across all country contexts, there are limited resources to address societal needs. Therefore, recommendations regarding the importance of assessing whether actions to address societal issues offer value for money have international relevance. Additionally, given the economic and health burden of overweight and obesity worldwide, this study can be replicated to analyse the current obesity prevention funding landscape in other countries. This could be used to strengthen the case for adequate funding for obesity prevention research and implementation elsewhere.

Strengths and limitations

This study has several strengths. We adopted a focused and conservative search strategy to identify obesity prevention funding from Federal Government and major federally funded Australian research organisations, which provided a relatively representative picture of the obesity funding landscape from the Federal Government in Australia. Synthesising the data by risk factor allowed us to analyse areas where further funding may be needed. However, our study also has several limitations. Firstly, funding allocations from other government-funded or non-government organisations, which may also play a significant role in obesity prevention funding, are not included. For example, Australian state and territory governments have implemented various initiatives to improve food environments and enhance physical activity environments to improve population health, such as Healthy Together Victoria. Secondly, while this study attempted to include all relevant funding

allocations from major national funding sources, due to the keyword searches used or the targeted funding sources examined, it may have missed other obesity prevention funding allocations (e.g., the Healthy Food Partnership). Although exclusion of these funding allocations might result in underestimates, the inclusion of funding allocations related to obesity risk factors research (e.g., diet, PA, etc), might lead to an overestimation of obesity prevention research funding. Thirdly, there could be miscategorisation or miscoding of data given the variations in data presented across different sources, and years. To minimise this risk, multiple authors were involved in screening, data extraction and coding. Lastly, some data were missing or published in formats that made them challenging to categorise, in which case data coding was based on other available information, including title, research area and the research keywords.

Conclusion

Funding for obesity prevention in the period from 2013 to 2022 has fluctuated, but has remained consistently low across major funding sources in Australia (NHMRC, ARC, MRFF and Federal Government Budget). There is a clear need to provide sufficient and sustained Federal Government funding towards obesity prevention research and implementation to reduce chronic disease risks and improve the health of the population.

Acknowledgements

HT and VB are researchers with the NHMRC-funded Centre of Research Excellence (CRE) in Translating Early Prevention of Obesity in Childhood (EPOCH-Translate CRE) (GNT2006999). HT, MA and JA are researchers with the NHMRC-funded CRE in Food Retail Environment for Health (REFRESH) (GNT1152968). VB and MS are researchers with the NHMRC-funded Ideas Grant GNT2002234. VB is a researcher with the NHMRC-funded Project Grant GNT1162980 and Partnership Grants GNT1161223 and GNT2023737. MA received a Deakin University Postgraduate Research (DUPR) scholarship. JA is supported by a Deakin University Postdoctoral fellowship. NW is funded by NHMRC Ideas Grant GNT2002234 and has a scholarship through Deakin University PRECIS: PREcision Evidence for Childhood obesity prevention InterventionS Postgraduate Research Scholarship.

We would like to acknowledge Siti Khadijah Binti Mohamad Asfia for their valuable assistance in data extraction.

The opinion, analysis and conclusions presented in this paper are solely of the authors and should not be attributed to any funding bodies.

This paper is part of a special issue of the journal focusing on: 'Collaborative partnerships for prevention: health determinants, systems and impact'. The issue

has been produced in partnership with the Collaboration for Enhanced Research Impact (CERI), a joint initiative between The Australian Prevention Partnership Centre and National Health and Medical Research Council Centres of Research Excellence. The Prevention Centre is managed by the Sax Institute in collaboration with its funding partners.

Peer review and provenance

Externally peer reviewed, commissioned.

Competing interests

All authors are researchers in obesity prevention and receive funding as detailed in acknowledgements above.

Author contributions

VB was responsible for study conception; VB and HT were responsible for study design; HT, SA, MA, MS, PN and NW were responsible for data extraction and HT was responsible for data collection, data analysis, interpretation of results and preparation of the draft manuscript. All authors reviewed the results and approved the final version of the manuscript.

References

1. The Organization for Economic Cooperation and Development. Health at a Glance. US: OECD; 2017. [cited 2023 Dec 14]. Available from: www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017_health_glance-2017-en
2. Swinburn BA, Kraak VI, Allender S, Atkins VJ, Baker PI, Bogard JR, et al. The Global Syndemic of Obesity, Undernutrition, and Climate Change: The *Lancet* Commission report. *Lancet*. 2019;393(10173):791–846.
3. Commonwealth of Australia 2022. The National Obesity Strategy 2022–2032. Canberra: Health Ministers Meeting; 2022 [cited 2023 Dec 14]. Available from: www.health.gov.au/sites/default/files/documents/2022/03/national-obesity-strategy-2022-2032_0.pdf
4. Obesity Collective. Weighing in: Australia's growing obesity epidemic. Canberra: The Obesity Collective; 2019 [cited 2024 Jan 16]. Available from: theobesitycollective.org.au/wp-content/uploads/2022/10/Report_Weighing-In-Australias-growing-obesity-epidemic.pdf
5. Hayes A, Tan EJ, Killedar A, Lung T. Socioeconomic inequalities in obesity: modelling future trends in Australia. *BMJ Open*. 2019;9(3):e026525.
6. Lee BY, Bartsch SM, Mui Y, Haidar LA, Spiker ML, Gittelsohn J. A systems approach to obesity. *Nutr Rev*. 2017;75(suppl 1):94–106.
7. Huse O, Hettiarachchi J, Gearon E, Nichols M, Allender S, Peeters A. Obesity in Australia. *Obes Res Clin Pract*. 2018;12(1):29–39.
8. Blackford K, Leavy JE, Vidler A-C, Chamberlain D, Pollard C, Riley T, et al. Initiatives and partnerships in an Australian metropolitan obesity prevention system: a social network analysis. *BMC Public Health*. 2021;21(1):1542.
9. Jackson H, Shiell A. Preventive health: How much does Australia spend and is it enough? Canberra: Foundation for Alcohol Research and Education; 2017 [cited 2023 Dec 14]. Available from: fare.org.au/wp-content/uploads/Preventive-health-How-much-does-Australia-spend-and-is-it-enough_FINAL.pdf
10. Research Australia. Australian obesity research: global leadership and local change. Canberra: Research Australia; 2022 [cited 2023 Dec 14]. Available from: issuu.com/researchaustralia/docs/ra0062_novo_obesity_report_online_
11. Public Health Association Australia. Prevention and management of overweight and obesity in Australia. Canberra: PHAA; 2022 [cited 2023 Dec 14]. Available from: www.phaa.net.au/Web/Web/Advocacy/Policy-position-statements.aspx
12. Martin J. Implementing the National Obesity Strategy: no time to waste. Sydney: MJA InSight+; 2022 [cited 2023 Dec 12] Available from: insightplus.mja.com.au/2022/9/implementing-the-national-obesity-strategy-no-time-to-waste/
13. Aagaard K, Mongeon P, Ramos-Vielba I, Thomas DA. Getting to the bottom of research funding: acknowledging the complexity of funding dynamics. *PLoS One*. 2021;16(5):e0251488.
14. Shiell A, Jackson H. How much does Australia spend on prevention and how would we know whether it is enough? *Health Promot J Austr*. 2018;29 Suppl 1:7–9.
15. Swinburn BA. Obesity prevention: the role of policies, laws and regulations. *Aust New Zealand Health Policy*. 2008;5(1):12.
16. National Health and Medical Research Council. Outcomes of funding rounds. Canberra: Australian Government NHMRC; 2023 [cited 2023 Dec 14]. Available from: www.nhmrc.gov.au/funding/data-research/outcomes
17. Australian Research Council. ARC data portal. Canberra: Australian Government ARC; 2023 [cited 2023 Dec 12]. Available from: dataportal.arc.gov.au/Landing
18. Australian Government. Medical Research Future Fund grant recipients. Canberra: Australian Government Department of Health and Aged Care; 2023 [cited 2023 Dec 12]. Available from: health.gov.au/summary-of-mrff-grant-recipients

19. Australian Government. Archive of Budgets. Budget paper No. 2: budget measures series documents. Canberra: Australian Government; 2023 [cited 2023 Dec 12]. Available from: archive.budget.gov.au/
20. De Bosscher V, Shibli S, De Rycke J. The societal impact of elite sport: positives and negatives: introduction to ESMQ special issue. *European Sport Management Quarterly*. 2021;5:625–35.
21. Matolić T, Jurakić D, Podnar H, Radman I, Pedišić Ž. Promotion of health-enhancing physical activity in the sport sector: a study among representatives of 536 sports organisations from 36 European countries. *BMC Public Health*. 2023;23(1):750.
22. Australian Institute of Health Welfare. Australian burden of disease Study 2018: Interactive data on risk factor burden. Canberra: AIHW; 2021 [cited 2023 Dec 14]. Available from: www.aihw.gov.au/reports/burden-of-disease/abds-2018-interactive-data-risk-factors/contents/about
23. Ghanbarzadegan A, Ivanovski S, Sloan A, Spallek H. Oral health research funding in relation to disease burden in Australia. *AustDent J*. 2023;68(1):42–7.
24. Alston L, Raeside R, Jia SS, Partridge SR. Underinvestment in nutrition research for at-risk populations: An analysis of research funding awarded in Australia from 2014 to 2021. *Nutri Diet*. 2022;79(4):438–46.
25. Gilbert SE, Buchbinder R, Harris IA, Maher CG. A comparison of the distribution of Medical Research Future Fund grants with disease burden in Australia. *Med J Aust*. 2021;214(3):111–3. e1.
26. Yung AR, Milicevic M, Berk M. Fair funding for mental health research. *Australian N Z J Psychiatry*. 2023;57(8):1091–4.
27. Kavanagh SA, Hawe P, Shiell A, Mallman M, Garvey K. Soft infrastructure: the critical community-level resources reportedly needed for program success. *BMC Public Health*. 2022;22(1):420.
28. Ananthapavan J, Sacks G, Brown V, Moodie M, Nguyen P, Veerman L, et al. Priority-setting for obesity prevention—The Assessing Cost-Effectiveness of obesity prevention policies in Australia (ACE-Obesity Policy) study. *PLoS One*. 2020;15(6):e0234804.
29. Fruh S, Williams S, Hayes K, Hauff C, Hudson GM, Sittig S, et al. A practical approach to obesity prevention: Healthy home habits. *J Am Assoc Nurse Pract*. 2021;33(11):1055–65.
30. Wiium N, Breivik K, Wold B. Growth Trajectories of health behaviors from adolescence through young adulthood. *Int J Environ Res Public Health*. 2015;12(11):13711–29.
31. Gooley M, Baur L, Arashiro Z, Petre T, Martin J, Mitchell J, et al. Addressing obesity: determined action and bold leadership required for change. *Public Health Res Pract*. 2022;32(3):3232219.
32. Lion A, Vuillemin A, Léon F, Delagardelle C, van Hoya A. Effect of elite sport on physical activity practice in the general population: a systematic review. *J Phys Act Health*. 2023;20(1):77–93.
33. National Health and Medical Research Council. Research funding statistics and data 2022. Canberra: Australian Government NHMRC; 2022 [cited 2023 Jan 30]. Available from: www.nhmrc.gov.au/funding/data-research/research-funding-statistics-and-data
34. Rosewarne E, Hoek AC, Sacks G, Wolfenden L, Wu J, Reimers J, et al. A comprehensive overview and qualitative analysis of government-led nutrition policies in Australian institutions. *BMC Public Health*. 2020;20(1):1038.