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Research Article

Child Dental Benefits Schedule Subsidised Existing Utilisation of Dental Care over Addressing Unmet Needs

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Priority Populations in oral health are defined as people from remote areas of Australia, low-income households, specialised medical needs, and Indigenous people. Children in these groups have irregular dental visiting patterns and a higher proportion have never accessed services. The Child Dental Benefits Schedule (CDBS) is a means-tested policy which provides financial support for eligible children to access dental services. This study aimed to explore how the introduction of CDBS affected dental visiting behaviours of Priority Populations. The outcomes of interest were the use of CDBS and its monetary benefit in the four-year period post-CDBS implementation based on a sample from the Longitudinal Study of Australian Children. Binary logit and linear models with interaction terms were used to estimate the effect of priority status and previous reported dental visiting behaviours on the probability of use and the value of subsidy claimed from CDBS. Of the children with no previous access to dental services, 33.7% were CDBS users, compared to 29.9%, 41.1%, and 44.1% who reported historically accessing services once, twice, and thrice, respectively. After adjustment for confounders, there were no significant interactions between Priority Populations and previously reported visiting behaviours; however, the pattern of lower utilisation by those with no previously reported access was evident. The state of Western Australia had a significantly lower proportion of estimated utilisation compared to all other states and territories. Children from low-income families benefitted relatively more from CDBS compared to other income groups; however, only a small proportion of the program was used to subsidise new utilisation of dental care. Children with unfavourable past dental visiting behaviours are likely to have higher unmet need, face barriers to access, and the oral health benefit is likely to be the highest. Policymakers should consider how this and similar programs can better target populations with difficulty accessing services, which will also contribute to reducing inequalities in oral health outcomes.

1. Introduction

Access to dental services in early childhood is necessary for prevention of dental diseases and early treatment to prevent tooth loss and hospitalisation due to dental caries [1]. Children who receive timely, appropriate, and regular dental services are less likely to have severe dental diseases, pain, and need urgent care [1]. Children, who usually access dental services for a problem rather than a routine check-up, have significantly higher prevalence and severity of dental caries [2]. Unmet needs for dental care for children with dental caries result in preventable hospitalisation and an avoidable burden on the health system [3, 4]. In Australia, population studies found 57% of children had seen a dental provider before the age of five years, 21% had irregular visiting patterns, and 11% had never accessed care [2].

Disparities in dental caries and access to services are evident in a number of disadvantaged and vulnerable populations [2, 5]. A national Australian strategy aiming to overcome disparities in oral health defined these groups as "Priority Populations" and also included people with additional or specialised health care needs [5]. Priority Populations experience barriers to access care and require targeted and evidence-based intervention and models of care

to improve access to dental services [5]. Up to a third of children from remote and very remote areas of Australia, low-income households, and Aboriginal and Torres Strait Islander (herein referred to as Indigenous) children had irregular dental visiting patterns and a higher burden of dental diseases [2].

To understand the complexities of access to health care, Levesque et al. conceptualised the dimensions which enable access [6]. The five domains described were approachability, acceptability, availability and accommodation, appropriateness, and affordability [6]. Applying this framework to dental services, approachability is the ability for individuals to locate dental services when there is a perceived need to access the care [6]. Dental services must also consider individuals' social and cultural backgrounds to facilitate acceptability of care [6]. For example, those experiencing high dental fear may experience barriers to access care due to the fear of judgement and shame from service providers [7]. Availability and accommodation refers to physical location and capacity of the service [6]. Waiting lists and demand exceeding capacity are barriers often restricting individuals' ability to reach subsidised public sector dental services in Australia [8]. The timeliness, assessment, and delivery of preventive and treatment-based services for individuals' needs encompass appropriateness of care [6]. Disparities are often experienced by Priority Populations with an increased proportion accessing care for problems and treatment rather than prevention [2]. The final domain of access includes the ability to pay for dental care. This includes direct costs of treatment and indirect costs such as lost time at work for accompanying a child to a dental appointment [9]. Strong predictors of dental service utilisation are the age at the first dental visit and past visiting behaviours [10]. Previous access to dental services indicates individuals can overcome barriers to access care and navigate the complexities of the dental system [6, 10].

The ability to afford dental services has been reported as one of the most significant barriers to access care [11, 12]. In Australia, the dental system is a mixed model consisting of private and public sectors. Public sector dental services provide free and subsidised dental services; however, eligibility varies across Australian state and territories. Some public sector services are means-tested and others have a universal eligibility for children to access. While the majority of Australian children report accessing private dental services, the proportion of children from Priority Populations accessing private services is significantly lower than the general population [2]. Although individuals can take up private health insurance to cover part of the expense, they bear up to two-thirds of the direct costs of dental services in Australia [13]. In 2014, the Australian Commonwealth Government introduced a dental funding policy for children called the Child Dental Benefits Schedule (CDBS) [14]. Administered through the universal medical insurance schedule (Medicare), eligible 2–17-year-old children can access approximately A$1000 of dental treatment benefit over two calendar years from any participating public or private sector dental practitioner [14]. The age of eligibility was lowered to include 0–2 year olds in 2021. The policy aimed to improve Australian children's access to dental services and "help children develop good oral health habits early in life and help to arrest the increase in child dental decay" [14].

Evaluation of the dental funding policy has been limited and the performance indicators poorly defined [14]. The previous literature has found the uptake and utilisation of the CDBS to be low [15–17]. Less than a third of the eligible population have utilised the funding and family characteristics such as mothers health and behaviours predicted nonutilisation of the schedule [15]. The success of health policies can be understood through health governance which "involves ensuring that strategic policy frameworks exist and are combined with effective oversight, coalition building, regulation, attention to system-design, and accountability" [18]. The Act governing the CDBS stipulates an independent review of the operation of the Act should occur at three yearly intervals, and the last review was published in 2019 [19]. This review identified that consent procedures for utilisation of the schedule were onerous for service providers and parent/guardians, and eligibility notification letters needed to be improved for those people with diverse backgrounds [19]. Amongst other recommendations, the review of the Act noted there were additional barriers to obtain consent and utilisation of the schedule by Priority Populations that needed addressing [19]. An independent audit of the schedule questioned the relevance of the performance indictors to measure the policy's objective of improving access to dental services [14].

Understanding the Levesque model of access to care, prior use of dental services may influence an individual's ability to navigate approachability, acceptability, availability and accommodation, appropriateness, and affordability of dental services. Understanding the complexities of access to health services and barriers experienced by Priority Populations, this study aimed to explore the relationship between dental visiting behaviours, CDBS utilisation, and Priority Population's status. We hypothesise that past access to dental services acts as a predictor of CDBS utilisation for each of the four Priority Populations: low-income households, remote and very remote areas, Indigenous children, and children with specialised health needs.

2. Methods

2.1. Overview of Study Design. CDBS claims recorded in the Medicare database were linked to a longitudinal cohort study of Australian children. Dental visiting patterns pre-implementation of the CDBS in 2014 were used to determine access prior to the policy, identifying those with unmet need and no established visiting patterns. Priority Populations were defined using the Australian National Oral Plan, as those living in low-income households, those living in remote and very remote areas, Indigenous children, and children with specialised health needs [5].

2.2. Data. The Longitudinal Study of Australian Children (LSAC) is a biennial cross-sequential dual cohort study, with data collection commencing in 2004. A birth (*B*) and kindergarten (*K*) cohort were recruited at baseline and were aged 0 to 1 and 4 to 5 years, respectively. Children were recruited through the Medicare enrolment database using systematic random sampling [20, 21]. Demographic, family, health, and wellbeing-related questions were asked in each study wave, with nine waves available at the time of analysis. At baseline, the LSAC study children were compared to the Australian Bureau of Statistics 2001 Census data and were representative of the Australian child population at the time [20, 21]. Further information on the study design, measures, and how to access the data can be found in technical papers and reports online [20, 21].

The CDBS was implemented on 1st January 2014 and is ongoing. The *B* and *K* cohorts were respectively 10 and 14 years of age when the CDBS was implemented (Supplementary Table 1). According to the schedule rules, a child can access the funding for the full calendar year after being assessed eligible even if they stop meeting eligibility requirements (turning 18 years of age or no longer receiving eligible payments). In 2017, the *K* cohort were turning 17 to 18 years of age and became ineligible to claim benefits from the schedule at the end of the calendar year. Data between 2014 and 2017 were included in this study.

2.3. Variables. The outcomes of interest were any use of the CDBS (binary), the number of claims (count), and benefit paid (dollar value) in the four-year postimplementation of the CDBS. Medicare dental claims data, recorded using the Australian Dental Item codes, [22] were linked to consenting participants surveyed in the LSAC.

Priority Populations were the predictor variables of interest. These variables were measured by 2014 LSAC self-reported Indigenous status (yes/no), parent-reported weekly household income (dollar value), Australia Bureau of Statistics Remoteness Area (major cities, inner regional, outer regional, remote, and very remote), and parent-reported experience of a medical condition (yes/no). To account for parents who were unable to recall their weekly household income, the LSAC imputed missing data and imputed income variables were used in this study. The child's career reported if dental services were used in the previous year and were first collected in the LSAC from wave three for *B* (4 to 5 years) and wave two for the *K* (6 to 7 years) cohorts, respectively. Previous dental visiting behaviours were measured by the number of parent-reported uses of dental services (0 to 3) across the three waves prior to CDBS implementation and were categorised as uncertain if previous reported dental visiting behaviours were missing or reported as not recorded in that wave (none, one, two, three, and uncertain).

Other explanatory variables included the child's state/territory of residence in 2014 and the Socioeconomic Index for Advantage/Disadvantage (SEIFA) and are presented visually in a directed acyclic graph (Supplementary Figure 1).

2.4. Statistical Methods. IBM SPSS (version 28) was used for data analysis, and figures were created using the ggplot2 (v.3.3.3) and ggpubr (v.0.4.0) packages in RStudio (Boston, MA). Descriptive statistics (number and proportion) of the LSAC demographic at the time of CDBS implementation (2014) were reported. Eligibility for CDBS was not included in the linked Medicare and administrative data. To calculate eligibility for the CDBS, reported weekly household income was used as a proxy eligibility measure due to the schedule being means-tested. For children who had CDBS claims in the Medicare database, the 95th percentile for household income was determined and used as the income cutoff for eligibility. Those with a parent-reported weekly income above the 95th percentile threshold were excluded from the analysis due to the low likelihood for eligibility for the schedule.

A descriptive analysis of the Priority Population groups considered unadjusted number and proportion of those who had any claim in the CDBS between 2014 and 2017. The chi-square test for independence was used to explore differences between groups. For participants who made a claim in the study period, the mean and standard deviation of the count of item services and benefit paid were reported.

A binary logistic general linear model (GLM) with robust standard errors was used to estimate the effect of Priority Population's status, LSAC cohort, and previous dental visiting behaviours on the use of CDBS in the study period. Interaction terms between Priority Population's status and previous reported dental visiting behaviours were included in the models. Models were adjusted for the state or territory of residence, and SEIFA, with the estimated marginal means (EMM) representing the adjusted percentage of CDBS utilisation. Multicollinearity between variables in the model was explored using variance inflation factor analysis, and no evidence of correlation between model variables was found.

A second GLM were conducted, where participants who made claims in the schedule were included in the analysis of the count of services and benefit received in the study period. For the outcomes of item count and benefit received by users of the CDBS, Poisson and linear GLM models were used to model the effect of Priority Population status, LSAC cohort, and previous visiting behaviours, also adjusted for the state and territory and SEIFA. EMMs reported the conditional model effects for the Priority Populations moderated by previous reported dental visits in a forest plot.

3. Results

Table 1 reports the characteristics of the *B* and *K* cohorts at the time of CDBS implementation. Priority Population groups represented the minority of the participants with 3% ($n = 189$) identifying as Indigenous, 2% ($n = 124$) located in remote and very remote Australia, and 5% ($n = 357$) with parent-reported medical conditions. Majority of the LSAC participants (82%; $n = 5973$) reported access to dental services at least once prior to the implementation of the CDBS, 12% ($n = 869$) reported no access to services in the three survey waves prior, and 6% ($n = 459$) were uncertain.

Table 1: Characteristics of the Longitudinal Study of Australian Children included in this study and the year of implementation of the Child Dental Benefits Schedule (2014).

		Study participants $n = 7301$		Missing
		n	(%)	*n*
Child Dental Benefits Schedule estimated eligibility	No	1741	(25.7)	535
	Yes	5025	(74.3)	
Cohort	Birth	3764	(51.6)	0
	Kindergarten	3537	(48.4)	
State of residence	New South Wales	2195	(30.1)	0
	Victoria	1727	(23.7)	
	Queensland	1614	(22.1)	
	South Australia	496	(6.8)	
	Western Australia	759	(10.4)	
	Tasmania	231	(3.2)	
	Norther Territory	89	(1.2)	
	Australian Capital Territory	190	(2.6)	
Socioeconomic Index of Advantage/Disadvantage (deciles)[‡]	Low (1 to 4)	2409	(33.0)	1
	Middle (5 to 7)	2285	(31.3)	
	High (8 to 10)	2606	(35.7)	
Indigenous status	Non-Indigenous	7110	(97.4)	2
	Indigenous	189	(2.6)	
Weekly household income[ǂ]	*Q*1	1682	(24.9)	535
	*Q*2	1707	(25.2)	
	*Q*3	1686	(24.9)	
	*Q*4	1691	(25.0)	
Remoteness area (ABS)	Major cities	4617	(63.2)	0
	Inner regional	1675	(22.9)	
	Outer regional	885	(12.1)	
	Remote and very remote	124	(1.7)	
Parent-reported medical condition/s	No	6792	(95.0)	152
	Yes	357	(5.0)	
Number of parent-reported dental visits three waves pre-CDBS	None	869	(11.9)	0
	One	1668	(22.8)	
	Two	2278	(31.2)	
	Three	2027	(27.8)	
	Uncertain	459	(6.3)	

LSAC: Longitudinal Study of Australian Children; CDBS: Child Dental Benefits Schedule. [‡]Low Socioeconomic Index of Advantage/Disadvantage indicates low area-level socioeconomic position. [ǂ]Continuous variable weekly household income estimates fixed to quartiles; *Q*1 = $1435, *Q*2 = $2201, *Q*3 = $3133, and *Q*4 = 5485.

Unadjusted analysis found that the younger *B* cohort, low-income households, and inner and outer regional residents were associated with a higher proportion of CDBS utilisation, average number of service items, and benefit paid (Table 2).

Table 3 reports the estimated proportion of children who utilised the CDBS in the first four years of post-implementation. After adjusting for the state or territory of residence and SEIFA, there was evidence of a cohort effect, with 38.6% (95% CI 32.3, 45.3) of the *B* cohort using CDBS compared to 30.4% (95% CI 24.8, 36.6) of the *K* cohort.

There was a significant gradient between increasing use of previous dental services and the proportion utilising the CDBS. After adjustment for confounders, 33.7% of children with no previous access to dental services utilised CDBS, compared to 29.9%, 41.1%, and 44.1% of children using CDBS who reported historically accessing services once, twice, and thrice, respectively. There were no differences in CDBS use by Indigenous status, remoteness area, and parent-reported medical conditions. Participants in the bottom two household income quartiles had a higher proportion of CDBS use than the third- and fourth-income quartile groups.

There were no statistically significant interactions between previously reported visiting behaviours and Indigenous' status, region, and parental-reported medical conditions; however, the pattern of increasing utilisation with previously reported access was evident (Table 3). The model-adjusted estimates of the count of CDBS items and dollar benefit paid were explored graphically by stratifying the Priority Populations by previously reported dental visiting behaviours (Figure 1). For Indigenous children and low-income quartiles, there was a strong pattern of a higher estimated average count of services and benefit paid for

Table 2: Distribution of Child Dental Benefit Schedule use and claims in the four years postimplementation amongst eligible children stratified by Priority Populations.

		Any CDBS claims			Count of CDBS claims	Total benefit paid
		No $n = 2970$ n (%)	Yes $n = 2055$ n (%)	p value	Mean (SD)	Mean (SD)
Cohort	Birth	1501 (55.4)	1208 (44.6)	<0.001	7.8 (5.3)	486 (346)
	Kindergarten	1469 (63.4)	847 (36.6)		7.9 (5.1)	511 (338)
Number of parent-reported dental visits three waves pre-CDBS	None	374 (58.3)	268 (41.7)	0.312	7.4 (5.2)	461 (332)
	One	706 (58.2)	508 (41.8)		7.7 (4.7)	500 (322)
	Two	930 (58.9)	650 (41.1)		7.9 (5.2)	499 (345)
	Three	779 (61.5)	488 (38.5)		8.2 (5.6)	517 (371)
	Uncertain	181 (59.1)	141 (43.8)		7.3 (4.9)	467 (316)
Indigenous status	Non-Indigenous	2883 (59.2)	1991 (40.8)	0.656	7.9 (5.2)	499 (344)
	Indigenous	86 (57.3)	64 (42.7)		6.5 (4.5)	418 (293)
Weekly household income[ǂ]	$Q1$	774 (46.0)	908 (54.0)	<0.001	8.2 (5.5)	527 (359)
	$Q2$	999 (58.5)	708 (41.5)		7.8 (5.0)	493 (331)
	$Q3$	1197 (77.5)	347 (22.5)		7.1 (4.9)	445 (315)
	$Q4$[‡]	0 (0.0)	92 (100.0)		6.5 (4.6)	416 (321)
Remoteness area (ABS)	Major cities	1838 (62.1)	1124 (37.9)	<0.001	8.3 (5.3)	526 (352)
	Inner regional	692 (53.3)	607 (46.7)		7.4 (5.1)	475 (337)
	Outer regional	383 (56.3)	297 (43.7)		6.8 (4.7)	438 (310)
	Remote and very remote	57 (67.9)	27 (32.1)		6.0 (4.1)	398 (293)
Parent-reported medical condition/s	No	2761 (58.9)	1930 (41.1)	0.568	7.8 (5.2)	499 (345)
	Yes	142 (57.0)	107 (43.0)		7.5 (4.8)	463 (303)

[ǂ]Continuous variable weekly household income estimates fixed to quartiles; $Q1 = \$1435$, $Q2 = \$2201$, $Q3 = \$3133$, and $Q4 = 5485$. [‡]For children who had CDBS claims in the Medicare database, the 95th percentile for household income were determined and used as the income cutoff for eligibility. $n = 5025$.

Table 3: Model estimated marginal means of the proportion of eligible children who made a claim for four-year postschedule implementation.

		Marginal model effects			Conditional model effects: previous reported dental visits								
		Any CDBS claims			No previous visits		One previous visit		Two previous visits		Three previous visits		p value
		EMM	95% CI	p value	EMM	95% CI	EMM	95% CI	EMM	95% CI	EMM	95% CI	
Cohort	Birth	38.6	(32.3, 45.3)	<0.001									
	Kindergarten	30.4	(24.8, 36.6)										
Number of parent-reported dental visits three waves pre-CDBS	None	33.7	(21.4, 48.6)	0.004									
	One	29.9	(21.0, 40.6)										
	Two	41.1	(30.6, 52.4)										
	Three	44.1	(31.3, 57.8)										
	Uncertain	24.9	(13.1, 42.4)										
Indigenous status	Non-Indigenous	35.7	(30.6, 41.2)	0.524	36.7	(25.6, 49.5)	30.0	(22.5, 38.9)	42.0	(34.2, 50.2)	42.1	(33.3, 51.5)	0.910
	Indigenous	33.1	(24.8, 42.5)		30.7	(14.7, 53.3)	29.7	(17.0, 46.6)	40.2	(24.0, 58.8)	46.2	(25.8, 68.0)	
Weekly household income[‡]	$Q1$	37.1	(31.1, 43.6)	<0.001	36.1	(23.5, 51.1)	33.0	(23.5, 44.0)	44.6	(33.8, 56.0)	49.3	(35.9, 62.9)	0.025
	$Q2$	31.5	(25.8, 37.8)		31.0	(19.1, 46.1)	26.6	(18.2, 37.2)	37.2	(27.1, 48.6)	38.5	(26.3, 52.4)	
	$Q3$	25.0	(19.7, 31.8)		25.4	(14.0, 41.5)	20.1	(12.5, 30.7)	29.0	(19.5, 40.8)	26.8	(16.3, 40.8)	
	$Q4$	13.6	(8.8, 20.4)		14.3	(5.1, 34.3)	9.1	(3.9, 19.6)	13.8	(6.7, 26.0)	8.7	(3.5, 20.0)	
Remoteness area	Major cities	35.4	(29.7, 41.4)	0.507	33.7	(21.8, 48.1)	34.6	(25.1, 45.5)	36.8	(27.3, 47.4)	38.3	(27.2, 50.8)	0.612
	Inner regional	37.6	(31.5, 44.2)		34.7	(22.2, 49.7)	37.0	(26.7, 48.7)	42.4	(31.7, 53.7)	46.7	(34.0, 59.9)	
	Outer regional	36.0	(29.5, 43.0)		32.4	(18.8, 49.6)	34.3	(23.7, 46.7)	40.6	(29.8, 52.4)	44.3	(31.1, 58.4)	
	Remote and very remote	28.9	(17.5, 43.8)		33.9	(11.5, 67.0)	16.9	(6.4, 37.5)	44.7	(23.5, 67.9)	47.3	(22.2, 73.9)	
Parent-reported medical condition/s	No	35.1	(29.9, 40.6)	0.702	31.3	(21.5, 43.1)	32.0	(24.0, 41.2)	40.2	(30.9, 50.2)	42.7	(31.2, 55.1)	0.701
	Yes	33.7	(26.0, 42.5)		36.1	(18.8, 57.9)	27.8	(16.6, 42.8)	42.0	(28.1, 57.3)	45.6	(29.1, 63.1)	

Model controlled for Socioeconomic Index for Advantage/Disadvantage (SEIFA) and Australian state and territory. [‡]Continuous variable weekly household income estimates fixed to quartiles; $Q1 = \$1435$, $Q2 = \$2201$, $Q3 = \$3133$, and $Q4 = 5485$. $n = 4938$.

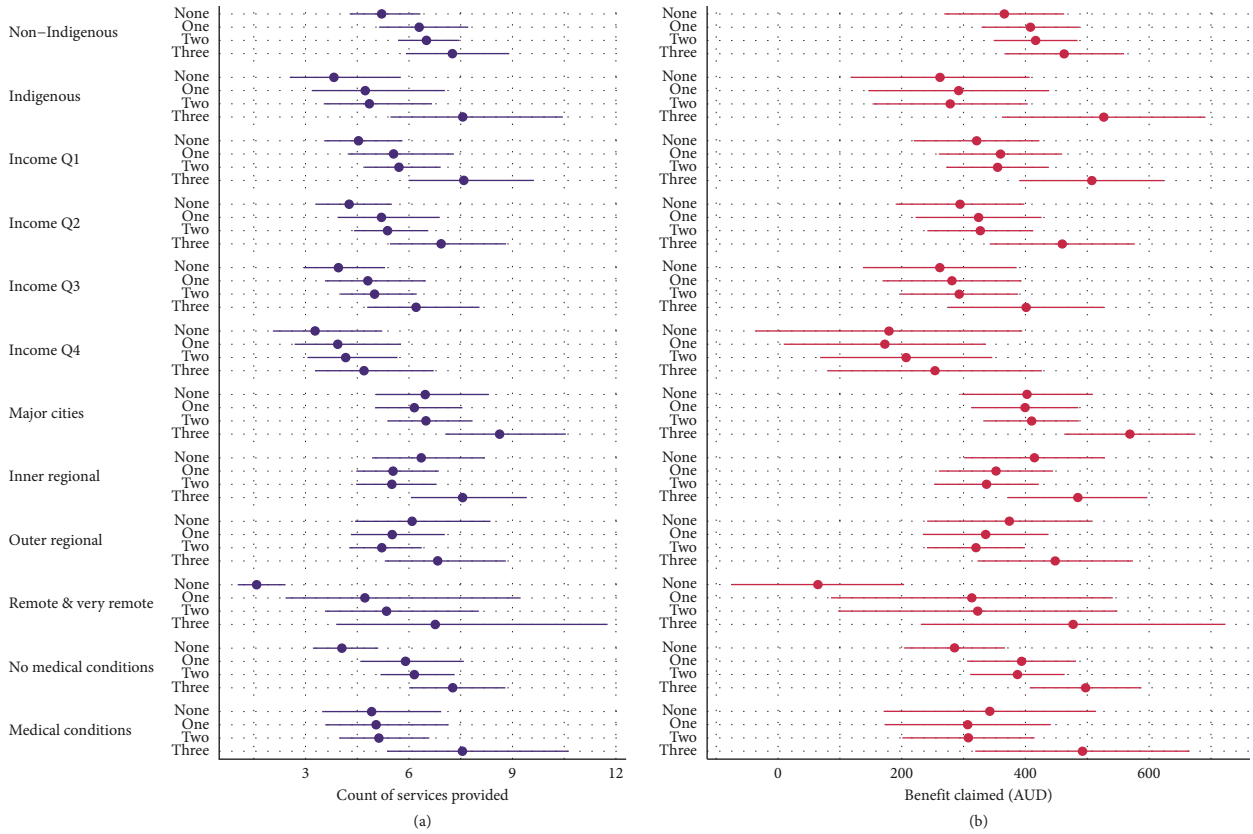

FIGURE 1: Estimated number of services and benefits claimed from CDBS for Priority Populations by previous visiting behaviours. Footer: Marginal model effects not presented in figure. Model adjusted for state/territory and SEIFA.

those with three previous reported visits than those with less favourable visiting patterns. Children in lowest income quartile with three previous visits received an estimated average of $508 (95% CI 391, 624) compared to an average $355 (95% CI 272, 438) with two previously reported visits. Remote and very remote children with three previous visits had 5.2 service items and $413 more benefit than children with no previous visits.

4. Discussion

This study explored the distribution of benefits provided under the CDBS amongst a cohort of Australian children. As required under the Dental Benefits Act 2008, periodic review of the CDBS reports low utilisation of the schedule by eligible children [19]. Utilisation has marginally increased since implementation and the previous literature has focused on describing factors predicting nonutilisation [15–17]. While the means-tested funding policy was generally successful in benefitting poorer households relatively more, this study found only a small proportion of the CDBS was used to enable new utilisation of dental care. On the contrary, CDBS appears to have subsidised existing utilisation, as is demonstrated by children with established dental visiting patterns prior to the schedule implementation capturing the highest proportion of CDBS utilisation and benefit. This can be explained by past access to dental services indicating an ability to successfully navigate the complexities of access to care such as the access domains of approachability, acceptability, availability and accommodation, and appropriateness [6]. However, it is children with unfavourable past dental visiting behaviours who are likely to have higher unmet needs and face barriers to access. This is also the group where the oral health benefit from CDBS-subsidised utilisation is likely to be the highest.

Results from this study found evidence to support, although marginal, the CDBS created new users of dental services. The primary policy goal of the CDBS was to improve access to dental services for children. The parameters of "improvement" in access to dental services, and its desired distribution, were not defined by the policy. Setting measurable and attainable policy goals allows for continual evaluation and enables improvements in the allocation of benefits across the population. Assessing new vis-à-vis existing patterns of service utilisation, as presented in this study, begins to explain how the schedule works and which groups benefit, as opposed to relying on crude utilisation rates for defining the policy success.

Public welfare programs that increase health outcomes measured in absolute terms can disproportionally benefit those at lower risk thereby worsening inequalities [23]. First highlighted by Rose et al., there remains a divide in the literature regarding the possibility that population strategies may exacerbate health inequalities [23, 24]. The rationale for population strategies worsening inequalities offered by Frohlich and Potvin states that population strategies impact

everyone similarly regardless of their risk, unintentionally leading to increased social inequalities [25]. However, McLaren et al. argued that given the complexity and context of the disease, not all population strategies will result in worsened inequalities of health amongst vulnerable groups [23]. A "superficial" strategy that relies on the population's ability to change its behaviours may not overcome structural, societal, and economic barriers to change, which vulnerable populations often face [23]. "Radical" approaches such as water fluoridation reduce inequalities in oral health because they do not rely on individual ability to act on the policy to reap benefits [23]. CDBS removes financial barriers to access dental care but the onus of utilisation remains with the child's parent or guardian. In the case of Priority Population, relying on promotion and empowerment to increase utilisation through CDBS may be insufficient to effectively improve access to care [23]. System-level factors may play a role in this also. For example, greater proportions of the population utilising CDBS in the states of Tasmania and South Australia have been attributed to sector-level differences, with more established public dental services in those states acting as a factor enabling CDBS use [19]. Recognising this, the World Health Organisation suggested that a balance between a supported public sector and an accountable private sector is necessary to reduce inequalities [18]. Further understanding of barriers and enablers of CDBS utilisation, in the context of the interplay between the public and private dental sectors, is necessary for improving the effectiveness of the scheme.

Targeted strategies for those with higher risk of the disease have been suggested as a measure against the possibility of worsening inequalities [25]. Such strategies can be complementary to population-level strategies for improving health and access to care, as the reality of political and financial constraints can prevent effective implementation of broad population-level and targeted policy and interventions [23]. CDBS is a recent policy for which social and structural barriers to utilisation remain, especially considering Priority Populations, warranting further investigation for these groups. Cultural, infrastructure, workforce, and other multifactorial issues have been established as barriers to care for Indigenous and regional and remote populations who experience difficulties in accessing dental care compared to the general population [26].

This study is not without limitations. The LSAC cohorts provide a snapshot of children growing up during the implementation of the CDBS. The study cohorts were representative of the Australian child population at the time of recruitment, however, they do not represent all age groups who were eligible to utilise the funding during the study timeframe. Attrition of participants in cohort studies are inevitable and the cohort of children included in this study had a slightly higher proportion of children from the States of Queensland, Tasmania and the Australian Capital Territory when compared to published population census statistics of children at baseline of the LSAC [20, 21]. There were also a slightly lower proportion of Indigenous children than the population and is a limitation of this data [20, 21]. Due to the nature of Priority Population, sample sizes were small and may have increased the confidence intervals of the estimates. In 2021, Australian Government lowered the age requirement, allowing eligible children from the age of 2 years to access CDBS funding. Complementary to the results presented here, future studies should investigate the age and cohort effects of younger children on use of the schedule.

5. Conclusion

The primary policy goal of the CDBS was to improve access to dental services for children. While the means-tested policy succeeded in supporting access to dental care by low-income households, only a small proportion of the benefit was used to subsidise utilisation of new dental care that would not have taken place in the absence of the schedule. Children with established dental visiting patterns prior to the schedule implementation had the highest proportion of CDBS utilisation, and this advantage was evident also within the Priority Populations. Relying on promotion and empowerment to increase utilisation of dental care may be insufficient in the presence of structural barriers in access to care, even if dedicated funding becomes available. The uptake of CDBS is reinforced by the presence of a supported public sector, which has a role to play alongside an accountable private sector. More precise definition of the policy objectives will enable better evaluation and targeting with the goal of improving access to care amongst Priority Populations.

Data Availability

The data used to support the findings of this study are available through application through the gatekeeper for the Longitudinal Study of Australian Children.

Additional Points

What Is Known about This Topic? (i) Priority populations have irregular dental visiting patterns and a higher proportion having never accessed services. (ii) The Child Dental Benefits Schedule (CDBS) is a means-tested funding policy aimed to improve Australian children's access to dental services and "help children develop good oral health habits early in life and help to arrest the increase in child dental decay." (iii) Few studies have investigated if the CDBS is improving access to care for priority populations. *What This Paper Adds*? (i) There were no significant interactions between children from remote areas, specialised medical needs, and Indigenous people and previous reported visiting behaviours. However, the pattern of lower utilisation by those with no previous reported access was evident. (ii) Children from low-income families benefitted relatively more from CDBS compared to other income groups; however, only a small proportion of the program was used to subsidise new utilisation of dental care. (iii) Children with unfavourable past dental visiting behaviours are likely to have higher unmet need, face barriers to access, and the oral health benefit is likely to be the highest.

Ethical Approval

Ethical approval for the LSAC was granted by the Australian Institute of Family Studies Ethics Committee.

Disclosure

The findings and views reported in this paper, however, are those of the authors and should not be attributed to the Department of Social Services (DSS) or the people and their communities involved in this study, or FaHCSIA, AIFS, or the ABS. The authors will continue to take a collaborative approach to the research with the study departments to ensure the research remains in line with the wishes of participating communities and families and contributes towards improving the lives of Australian Children.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Supplementary Materials

Supplementary table 1: response rate per wave of the Longitudinal Study of Australian Children ($n = 10{,}090$). Supplementary material 2: STROBE checklist. Supplementary figure 1: directed acyclic graph visualising research question. (*Supplementary Materials*)

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