Receipt of parenting, disability, unemployment, and other income support payments in persons aged 16 to 33 years – the associations with child maltreatment

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ABSTRACT

Background: Child maltreatment (CM) is a major public health concern with life-long effects. Its impact on income support has rarely been studied.
Objective: To examine the association between CM and receipt of income support payments and the budgetary impact for persons 16 to 33 years.
Participants and setting: A South Australian birth cohort, born 1986 to 2004 ($n = 339,411$).
Methods: We linked child protection (CP) administrative records with national welfare payment records, ending March 2020. Receipt of income support payments and mean payment amounts were described by CP contact (adjusted for child and family attributes). Budget impact was modelled at the national level.
Results: Adjusted odds ratio (AOR) for receipt of any income support payment was 3.01 (2.95–3.07) for individuals with any CP contact versus no CP contact. Among those receiving any payment, adjusted annualised mean benefit payment was $3754 (US$1446) among individuals with no CP contact, $6262 (US$4,307) in persons with any CP contact, and $9,747 in persons who'd been in OOHC. Cumulative payments modelled from age 16 to 33 years totalled $38,570 (US$26,652) for individuals with no CP contact, and $181,743 (US$125,003) for individuals who'd been in OOHC. Modelled for the Australian population to age 33, the extra cost associated with CP contact added 39 % to the government income support budget.
Conclusion: CM is strongly associated with receipt of income support payments. Investment in effective preventive and protective strategies for CP involved children could address this core social determinant of health, while providing budget savings.

1. Introduction

Child maltreatment has received considerable attention as a public health concern with high prevalence (6 % to 40 % depending on jurisdiction and type) worldwide, (Gilbert et al., 2009; Mathews et al., 2023; Mo et al., 2020; Moore et al., 2015; Peterson et al., 2018; Segal et al., 2019). Early-life adverse experiences, of which child maltreatment is one of the most profound, strongly impact on a range of outcomes that are not only intricately inter-related but also have life-long impacts (Swedo et al., 2023).

There are two inter-related mechanisms whereby child maltreatment causes negative outcomes; i) the direct impact of serious

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abuse and neglect on brains and bodies - through insults such as maternal drinking during pregnancy resulting in FASD, gross supervisory neglect resulting in access to dangerous substances, falls and injury and, injury from physical and sexual assault; ii) the physiological and relational response to a life under threat – with well documented impact on the developing brain and physiological systems affecting mental and physical health (Amos et al., 2011; Child Welfare Information Gateway, 2015; Shonkoff et al., 2012).

These fundamental mechanisms result in developmental vulnerabilities, as well as economic and societal impacts across adolescence into adulthood including school attendance and school performance (Armfield, Ey, et al., 2021; Armfield, Gnanamanickam, et al., 2021; Lanais et al., 2024; Maclean et al., 2018). The negative health and social consequences include poor physical and mental health, early death, school failure, criminal involvement, housing instability, relational failure and family violence. There are associated economic and budget impacts - including the cost of the child protection system, excess hospitalisations, emergency department presentations and mental health service use; cost of the criminal justice system and public housing (Fang et al., 2012; Gnanamanickam et al., 2023; Taylor et al., 2008).

Lower workforce participation is also predicted, through mechanisms such impaired childhood development, lower school attendance and poor educational attainment, physical ill-health and mental illness, high rates of disability, and relational challenges. Justice system involvement and incarceration will further exacerbate employment vulnerability and the need for income support.

Two recent (Bunting et al. (2018) & Herbert et al. (2023)) reviews have identified studies that examine economic consequences of child maltreatment in adulthood. The two reviews included 9 studies that examined income support specifically, while an additional more recent study, examined government social assistance through financial support in Canada in relation to child sexual or physical abuse (Domond et al., 2023). All ten studies reported a significant positive association between one or multiple types of child maltreatment and receipt of any income support payments.

However, there were many aspects of these studies that reduced generalisability of findings as well as significant gaps. Child maltreatment as well as income support was predominantly defined by self-report, which is problematic in both recall knowledge of possibly early-in-life events and social recall bias. Four of the ten studies examined income support at a single point in time. Studies with the longest duration over which outcomes were reported were 5 years (Fergusson et al., 2013) and 15 years (Domond et al., 2023). Most of the studies had a small sample size and were in restricted populations, such as only those who had been in foster care or only those receiving family assistance. Four studies examined only a single type of maltreatment (sexual or physical abuse, or neglect), two examined sexual and physical abuse and four examined any type of abuse. None of the studies reported the size of government income support payments by child maltreatment history, nor did any examine outcomes by type of income support payment. Total budget impact has never been reported. The 2023 review called for larger longitudinal studies to examine this relationship highlighting the non-representative nature of most of the studies (Herbert et al., 2023).

The aim of the current study was to describe the size of income support payments and its budgetary impact by recorded child protection system involvement - classified by seriousness of child maltreatment concerns (Armfield, Ey, et al., 2021; Brownell & Jutte, 2013; Segal, Armfield, et al., 2021) in a large whole of population birth cohort with long-term follow-up.

Determining the extent of the budget penalty is crucial to the public policy debate, especially around advocacy for preventive and supportive policies for child protection involved or at-risk populations during childhood. We hypothesise that individuals with higher level of involvement with the child protection system, indicating more serious maltreatment exposure and risk of harm, will be more likely to receive substantially higher income support payments, in comparison with individuals with no record of child maltreatment harm.

2. Methods

This study uses a sub-cohort of the iCAN (impacts of Child Abuse and Neglect) linked administrative dataset, covering all individuals, born in South Australia (SA) from 1 January 1986 to 31 March 2004. The dataset consists of individual level records of data from the SA Birth Registry, SA Perinatal Statistics Collection, National Death Index, SA Department for Child Protection, and Australia's national welfare payments data (DOMINO-Data Over Multiple Individual Occurrences) merged using de-identified linkage keys. The DOMINO data is provided by the Australian Government Department of Social Services (DSS) that administers all social welfare support payments to Australian residents. The study cohort was drawn from birth and perinatal data collections consisting of all individuals born in SA who had reached 16 years of age by March 2020, the end of the study period. Data linkage services were provided by South Australia and Northern Territory (SA-NT) DataLink and Australian Institute of Health and Welfare (AIHW) (Schneider et al., 2019). SA-NT DataLink reports an estimated false positive rate of 0.4 % and false negative rate of 0.8 % for linkage accuracy (SA NT DataLink, 2020).

Ethics approval for the study was obtained from the SA Health Human Research Ethics Committee (HREC14SAH28), the University of South Australia Human Research Ethics Committee (HREC000032801), and the Australian Institute of Health and Welfare Ethics Committee (EO2020/3/1174).

Child protection (CP) data was used to identify individuals with child maltreatment concerns, categorizing individuals into one of the following five CP groups based on their lifetime (to age 18 years) history of involvement with the CP system: i) no CP contact, ii) only notification(s) (report(s)) of child protection concern that did not proceed to an investigation, iii) at least one investigation of child maltreatment, with none substantiated, iv) substantiated child maltreatment that did not result in removal to out-of-home care (OOHC) and v) removal to OOHC, the latter indicating the highest level of concern for child safety. A binary variable of no CP contact and any CP contact was used for population weighted and adjusted analyses.

Australian government income support welfare payments were ascertained from the DOMINO dataset. This provided information on all payments and the amount of payment received. Payment types that were included for this study are all designed to provide a

basic income for those who meet strict income and asset thresholds and other criteria specific to each payment type. As such these payments are not universally available. They consist of income support payments for persons who were unemployed and actively looking for work (youth allowance, jobseeker payment), individuals in study or apprenticeships (Youth Allowance, Austudy), carers of persons with a disability, medical condition or aged (carer payment), individuals with a long-term disability (disability support pension), parents of dependent children aged <8 years (single and partnered parenting payment), and special benefits and income support supplement. Most of these payments were receivable from 16 years of age. See Supplementary Table S1 for more detail.

Variables used in adjusted analysis were socio-economic status ascertained using the area-level Index for Relative Socio-economic Disadvantage (Australian Bureau of Statistics, 2018) based on residence at birth, dichotomized into individuals in the lower two quintiles (most disadvantaged) and upper three quintiles (least disadvantaged) and sex as recorded at birth. Mother's employment status at time of birth, dichotomized into employed and not employed, was used as an individual level indicator of socio-economic status. This has been found in other studies to be the best single indicator of family-level disadvantage. We limited the covariates, to avoid over-adjusting for attributes that are part of the child maltreatment exposure.

2.1. Analyses

Characteristics of the study population were described for each of the five CP categories. The percentage of individuals receiving each payment type and the mean age of first receipt of payment were calculated for each CP category and by sex at birth. Mean annualised benefit payments across the study period (to March 2020) were calculated by dividing the total payments received by all individuals within each CP category and dividing by the total number of person years they were potentially eligible to receive payment, from 16th birthday or, if prior, from their first receipt of payment. Mean income payments for each year of age from 16 to 33 years were calculated by dividing the total payments that were received in the respective year by the total number of individuals who were eligible to receive payments at that age. These mean payments at each year of age were cumulatively added to estimate cumulative mean total payments per person by CP categories from 16 to 33 years of age.

Excess costs (in AU$ millions) for Australia from 16 to 33 years for persons with any CP contact vs none were calculated by multiplying the mean per person difference in benefit payment between individuals in the any CP group and the no CP, with the estimated Australian population with any CP contact history at each age. The CP involved population was based on the iCAN data percentage of any CP at ages 16 to 33 years applied to the June 2020 estimated resident population of Australia (Australian Bureau of Statistics, 2020). This data was used to generate total excess cost of income support payments for persons with any CP contact relative to persons with no such contact, for each year of age at 2020 Australian population levels, as well as cumulative excess payment between ages 16 and 33. Base payments were calculated as the total cost of payments received if the whole population had received income support payments at the rate of the no CP group. Excess payments (any CP minus no CP) as a percentage of base payments were then calculated.

Due to the nature of the distribution of income support payments-many nil (zero) payments followed by a semi-continuous skewed distribution of positive payments - two step analysis was used to model total income support payments. First, logistic regression was used to model the probability of receiving any income support payment, adjusting for sex and socio-economic status with an offset for duration of potential eligibility to receive payments. Odds ratios with confidence intervals and *p*-values are presented. Second, negative binomial regression was used to model the non-zero payments received among those who received at least one payment, also adjusting for sex and socio-economic status and offsetting for the duration of potential eligibility to receive payments. Adjusted mean total payments among those who received any payments were presented with confidence intervals.

All dollar values of payments are presented in 2020 Australian Dollars (AU$) and US$ (1 AU$ = 0.6878US$ (Australian Taxation Office, 2020)). All statistical analyses were generated using SAS/STAT software, Version 9.4 of the SAS System for Windows (copyright © 2020 SAS Institute Inc.) SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc., Cary, NC, USA. Figures were generated using Microsoft Excel.

Table 1
Cohort characteristics by CP involvement.

CP categories	N (%)	% female	Mean person years of follow-up[a]	Socio-economic status	
				% socio-economically disadvantaged	% mother un-employed at birth
No CP	265,430 (78.2)	47.9	9.6	43.7	23.3
Any CP	73,981 (21.1)	51.8	8.2	63.3	45.5
Notification	42,872 (12.6)	52.7	7.3	60.0	42.3
Investigation	13,757 (4.1)	50.6	9.5	65.1	45.9
Substantiation	10,373 (3.1)	52.8	9.2	67.3	50.4
OOHC	6979 (2.1)	47.4	9.6	73.5	56.7
Full cohort	**339,411 (100)**	**48.8**	**9.3**	**48.0**	**28.2**

CP – child protection, OOHC – out-of-home-care.
[a] From 16 years or from age of first payment if prior to 16 (1.6 % of cohort).

Table 2

Characteristics of receiving each income support payment types by CP involvement and sex.

CP categories	NSA & JSP			YAL			PP			DSP			All income support payments		
	All	F	M	All	F	M	All	F	M	All	F	M	All	F	M
Percent receiving payments at least once, %															
No CP	19.6	18.5	20.6	41.5	44.3	39.2	4.4	8.4	0.7	1.9	1.5	2.3	48.8	51.6	46.4
Any CP	29.0	26.6	31.6	63.1	65.3	60.8	13.5	23.9	2.2	6.6	5.1	8.3	69.9	72.4	67.4
Notification	23.5	22.5	24.7	56.5	59.3	53.4	10.2	18.0	1.5	4.7	3.6	6.0	62.9	66.0	59.4
Investigation	35.2	31.6	39.0	69.3	71.2	67.3	16.6	30.2	2.6	7.3	5.4	9.2	76.9	78.9	74.7
Substantiation	35.1	32.4	38.1	72.1	74.2	69.7	18.8	32.9	3.0	7.8	6.3	9.5	78.9	81.3	76.3
OOHC	41.4	35.2	47.0	78.1	78.9	77.5	19.6	36.5	4.3	15.0	12.5	17.3	86.3	87.0	85.7
Mean age (in years) at first receipt of income support payments															
No CP	23.4	23.5	23.3	18.4	18.4	18.3	23.2	23.0	25.5	18.7	18.9	18.5	19.0	19.1	19.0
Any CP	22.7	23.0	22.5	17.3	17.3	17.3	21.1	20.8	24.4	18.2	18.4	18.1	17.5	17.5	17.5
Notifications	22.8	23.0	22.5	17.6	17.6	17.6	21.2	21.0	24.2	18.3	18.7	18.1	17.8	17.8	17.8
Investigations	22.8	23.1	22.5	17.1	17.1	17.1	21.3	21.0	24.7	18.2	18.2	18.1	17.4	17.4	17.4
Substantiations	22.8	23.2	22.4	17.1	17.0	17.1	20.9	20.6	24.4	18.4	18.5	18.2	17.2	17.2	17.2
OOHC	22.5	22.8	22.3	16.8	16.8	16.8	20.5	20.0	24.5	18.1	18.1	18.1	16.8	16.7	16.9
Mean annualised payments ($s)															
No CP	415	306	516	928	1034	832	332	665	26	311	243	375	2103	2388	1844
Any CP	1178	873	1521	1978	2034	1916	1487	2724	102	1243	967	1553	6262	7063	5368
Notifications	906	699	1155	1825	1896	1740	1183	2098	81	856	640	1116	5033	5648	4295
Investigations	1326	967	1698	1903	1971	1833	1604	3065	96	1270	968	1582	6577	7601	5522
Substantiations	1395	1037	1818	2159	2221	2088	1944	3495	126	1434	1163	1753	7408	8492	6143
OOHC	1859	1358	2305	2584	2616	2560	2034	4156	167	2735	2436	3004	9779	11,324	8438

CP – child protection, OOHC – out-of-home-care, NSA – Newstart allowance, JSP – job seeker payment/allowance (potentially available from age 22), YAL – youth allowance (potentially available up to age 24), PP – parenting payment (partnered and single), DSP – disability support pension. All income includes all of the above payments plus AUS – Austudy payment, SPL – special payment, CLS – low income supplement, CAR – carer payment (including carer allowance), F - Females, M - Males.

3. Results

The study population comprised 339,411 individuals of which 48.8 % were females (Table 1). The mean follow-up period was 9.3 years (maximum 18 years), generating 3.15 million person-years of data. The no CP group accounted for 78 % of the population, with the OOHC group 2.1 %, the latter still supplying 66,998 person-years of data. The follow-up period was similar across all groups, except the notifications-only, which was 2 years less than average. Both area-level and individual level socio-economic status at birth (% of mothers being unemployed at birth) was lower among those with CP system contact.

Across all payment types, the proportion of individuals who received at least one income support payment was lowest in the no CP group and highest among individuals who had a history of placement in OOHC, indicating highest level of child protection concern (Table 2). Just under half (49 %) of the no CP group had received at least one income support payments, compared to 86 % in the OOHC group. The largest differential in percentage of individuals receiving payments between the CP groups was for disability support pension (DSP), which was 1.9 % in the no CP group and 15 % in the OOHC group. A large differential was also observed for parenting payments, no CP vs any CP (4.4 % vs 13.5 %). Individuals with any CP contact, on average received thier first income support payment 1.5 years earlier than those in the no CP group (at age 17.5 years vs 19 years) (Table 2) mainly driven by earlier receipt of youth allowance and parenting payment than the no CP group.

Total mean annualised income payments per person across all benefit types (averaged over the entire follow-up period), was lowest at $2103 (US$1446) among the no CP group. In comparison annualised payments were $5033 (US$3462) among individuals who were only the subject of a child protection notification (report) increasing to $9779 (US$6726) among those who'd been placed in OOHC (Table 2). The latter represents a 4.6-fold higher payment. Largest differentials were observed for disability support pension, at $311 (US$214) per person-year in the no CP group, AU$1,434 (US$986) per person-year among individuals who were the subject of substantiated maltreatment but never placed in OOHC and AU$2735 (US$1881) per person-year for those who had been in OOHC. More females received youth and parenting payments while more males received unemployment and disability payments. Similarly, the average annual payments for unemployment and disability were higher among males. Age of first receipt was similar between males and females for most payments.

The sum of mean income support payments, modelled across 18 years from 16 to 33 years of age, for the no CP contact group totalled $38,579 (US$ 26,535, Fig. 1). For individuals who were only ever the subject of a notification, mean support payments per person across the 18 years was AU$107,235 (US$ 73,756) and AU$181,917 (US$ 56,343) for individuals with a history of placement in OOHC.

Applying age-wise mean dollar values of excess income support payments receieved (i.e., mean excess $s at each year of age) by individuals with any CP contact to the June 2020 Australian population and reflecting the percentage with any CP contact in SA, we estimated the budgetary impact of excess income support for individuals with any child protection contact at AU$5263 million (US$ 3620 m, Fig. 2). This is predominantly composed of $1585 m (US$ 1090 m) in parenting payments, $1341 m (US$ 922) in extra disability pension payments and $1289 m (US$887) in unemployment benefit payments. Relative to total income support payments, if the whole population had received the same payments as the no CP group ($13,648 million), the cost saving would have been 28 %; or
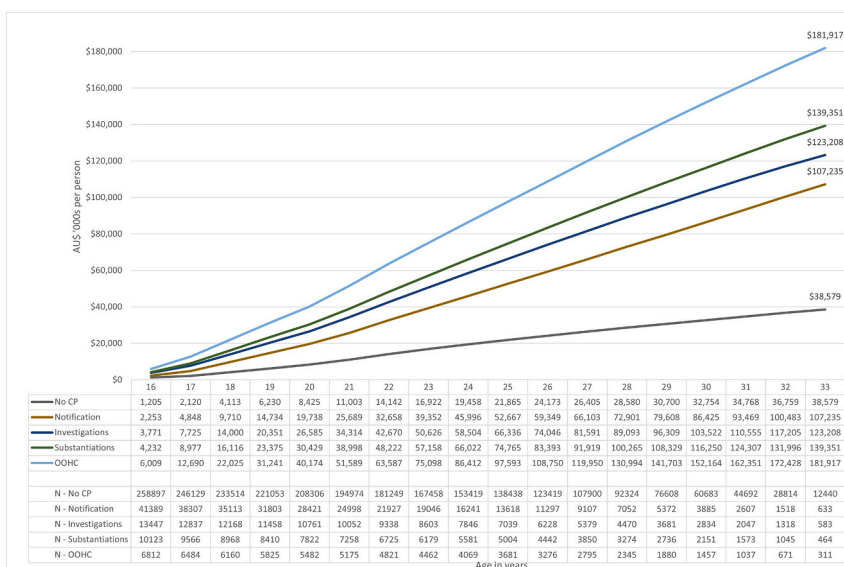

Fig. 1. Cumulative payments per person over time from age 16 onwards by CPS involvement.
Includes all of the following payments - NSA – Newstart allowance, JSP – job seeker payment/allowance, YAL – youth allowance, AUS – Austudy payment, PP – parenting payment, DSP – disability support pension, SPL – special payment, CLS – low-income supplement, CAR – carer payment (including carer allowance).
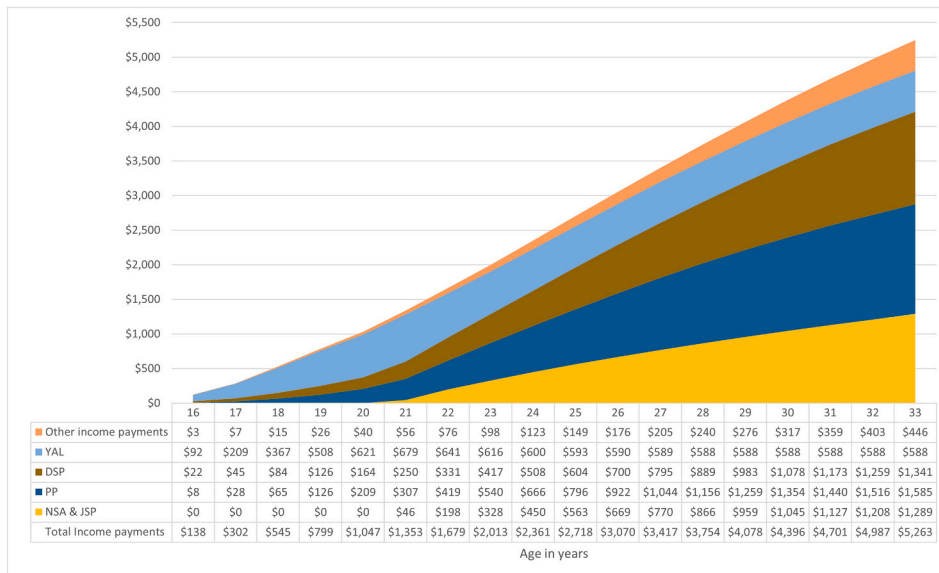
Fig. 2. Cumulative excess income support payments at June 2020 Australian population levels (in AU$ millions).
*Total income support payments include NSA – Newstart allowance, JSP – job seeker payment/allowance, YAL – youth allowance, AUS – Austudy payment, PP – parenting payment, DSP – disability support pension, SPL – special payment, CLS – low-income supplement, CAR – carer payment (including carer allowance).

the higher cost of income support payments for persons with CM history is imposing an estimated 39 % budget penalty (Supplementary Table S2).

Adjusting for the potential confounding of sex and individual and area-level socio-economic status, the probability of receiving any payment was only slightly attenuated; unadjusted odds for any CP vs no CP was 3.53 (3.46–3.60) and adjusted odds 3.01 (2.95–3.07). The estimated mean value of annualised income payments among those who received any payment was almost unchanged in the adjusted analysis. For example, the unadjusted mean annual payments in the no CP group were $3523 (95%CI 3501-3544), adjusted $3,754 (95 % CI 3705-3802), and in the any CP group unadjusted mean = $6970 (95 % CI 6904-7037) and adjusted mean = $6,967 (95 % CI 6865-7070) (Table 3). The adjusted odds of receiving any payment in individuals with a notification was 2.4 times that of persons with no CP contact and 7.4 times among individuals with a history of OOHC placement.

4. Discussion

In this retrospective longitudinal study, of a large cohort of individuals grouped by child protection contact, we found clear evidence of higher likelihood of receiving income support payments in persons with child protection system involvement. Payments started earlier in life. Annual payments for those receiving any income support payments were higher in persons with child protection system involvement than persons with no CP contact, after adjusting for sex and socioeconomic status. The differential odds of receiving payments and differential size of payments were both statistically significant and large.

Table 3
Probability of receiving any income support payments and mean per person-year for those receiving non-zero payments - Adjusted and unadjusted estimates.

CP categories	Receipt of at least one income support payment		Mean annual non-zero payments (95 % CI) AU$		
	Unadjusted odds ratio (95 % CI)	Adjusted[a] odds ratio (95 % CI)	Unadjusted	Adjusted[a]	Differences in adjusted payments
No CP	Ref	Ref	3523 (3501–3544)	3754 (3705–3802)	Ref
Any CP	3.53 (3.46–3.60)	3.01 (2.95–3.07)	6970 (6904–7037)	6967 (6865–7070)	3243 (3159-3268)
Notifications	2.75 (2.69–2.81)	2.41 (2.35–2.46)	5926 (5848–6005)	5959 (5857–6063)	2215 (2160-2270)
Investigations	4.35 (4.12–4.55)	3.68 (3.52–3.85)	7285 (7133–7440)	7290 (7119–7465)	3546 (3423-3673)
Substantiations	5.41 (5.13–5.70)	4.43 (4.21–4.67)	7879 (7692–8070)	7791 (7589–7999)	4047 (3893-4206)
OOHC	9.40 (8.72–10.14)	7.39 (6.85–7.97)	9849 (9578-10,128)	9747 (9460–10,044)	6003 (5763-6251)

CP – child protection, OOHC – out-of-home-care, AU$ - Australian dollars.
  [a] Adjusted for sex, area level socio-economic status and mother's employment status at birth with an offset for the duration of eligibility of receiving payment (follow-up time from age 16).

Our findings are consistent with previous published work on maltreated populations as identified in two recent reviews (Bunting et al., 2018; Herbert et al., 2023). For instance Dworsky (2005) found that just under 20 % of former foster care youth received Aid to Families with Dependent Children/Temporary Assistance to Needy Families (AFDC/TANF) in early adulthood, almost identical to our study where 20 % of those placed in care received the equivalent parenting payment. More recently, Lanford et al. found that the odds of receiving government assistance after experiencing childhood physical abuse was twice that of persons with no abuse history (Lansford et al., 2021). In contrast our study found that persons with substantiated abuse had 4.4 times the odds of receiving income payments compared to the no CP group. The recent Canadian study reported a two-fold risk of welfare receipt among individuals with physical abuse and or sexual abuse compared to never abused (Domond et al., 2023), and relationship across successive age periods of child abuse. Our study shows a dose response relationship by seriousness of maltreatment concern: a monotonic increase in odds of receiving income support payments and amount of income support across all CP categories. For all outcomes individual who were placed in OOHC had the worst outcomes.

Males are more likely than females to received payments more indicative of potential long term welfare dependency – specifically disability support pension and unemployment-related benefits. We note this is consistent with studies that find that maltreated boys are more likely to be developmentally vulnerable, have fewer strengths and less resilient at school commencement compared to girls (Armfield, Ey, et al., 2021; Lanais et al., 2024).

This study, for the first time has estimated the budget burden of welfare payments of child maltreatment across 17 years from mid-adolescence into early/mid- adulthood. Excess payments were estimated at $4159 per individual per year in this age group, cumulatively imposing a substantial additional financial burden to society compared to individuals with no recorded child maltreatment concern.

This 'downstream' cost consequence of child abuse and neglect is in addition to direct costs associated with statutory responses to child maltreatment as well as costs associated with well-studied consequences of child maltreatment such as costs on the health and justice system (Gnanamanickam et al., 2023). By highlighting the burden associated with maltreatment, the study provides strong budgetary impetus to invest in preventive interventions, to support children and young people experiencing maltreatment and support young adults to successfully navigate and ideally heal from their maltreatment experience, and more fully participate in society and the economy. These estimates could also be used in economic evaluations of prevention and intervention programs. The extensive descriptions of mechanisms of harms (Amos & Segal, 2018; Child Welfare Information Gateway, 2015; Shonkoff et al., 2012) confirms the relationship between child maltreatment and health and social outcome as likely causal, and the evidence supporting effective interventions highlight the opportunities for prevention (K, 2020; Stout et al., 2022).

Adjusting for socio-economic status in addition to sex attenuated the probability of receiving income support payments. However, the dollar value of payments remained largely the same after adjusting and still significantly and substantially higher among individuals with any CP contact, especially those with substantiated abuse or neglect or who had entered OOHC. Our study only used socio-economic status at birth, as socio-economic factors later in life are not independent of the relationship between maltreatment and economic outcomes later in life. In common with previous work, socioeconomic status had only a small modifying effect on our outcome of interest (Gnanamanickam et al., 2022, 2023; Segal, Armfield, et al., 2021). When extrapolated to the entire Australian population aged 16 to 33 years the excess budgetary impact of payments to individuals with recorded CP contact was estimated at $5263 million in 2020 dollars (US$ 3620) a 39 % additional cost.

These findings are also significant, as a predictor of multiple disadvantage across the life course and potentially intergenerationally. High receipt of income support payments is one of the economic outcomes associated with child maltreatment and is impacted by earlier consequences of child maltreatment. Receipt of income support payments also indicates a likely reliance on other social benefits/subsidies such as, housing support and energy costs (Australian Institute of Health and Welfare, 2019). Long-term unemployment and reliance on income benefit payments is a determinant of poverty and is implicated in poor mental health (Crowe et al., 2016) and deteriorating interpersonal relationships and potentially has a cascading intergenerational impact.

In estimating this high cost among individuals who experienced child maltreatment, we advocate for investment in primary prevention as well as targeting resource allocation for secondary and tertiary prevention (Corso & Fertig, 2010). Noting higher rates of parenting payments in persons with child maltreatment history evidence-based interventions targeting high risk teenagers and young parents with child maltreatment history, has the potential to disrupt the flow of cascading financial burden.

4.1. Strengths

Administrative data provide a unique opportunity to study the consequences of all types of child maltreatment in full populations, noting surveys will tend to exclude the most vulnerable, suffer from sampling error and recall and other bias. Linked administrative data is increasingly used in various research studies (Soneson et al., 2023) and has been used previously to identify health and social outcomes in the iCAN cohort (Armfield, Ey, et al., 2021; Gnanamanickam et al., 2023; Segal, Armfield, et al., 2021; Segal, Doidge, et al., 2021). Identification of maltreatment is likely highly complete using official records, especially in the context of mandatory reporting for all occupations working with children, which applies across Australia. The mean follow-up period of 9.3 years combined with a large population cohort provided >3 million person-years of complete data, which would not have been possible without linked-administrative data. The welfare payment data in this study is from the national Australia-wide department of social services, hence there is almost no loss of outcome data within the study period for this cohort. The end period of data for this project is March 2020 which was the most recent data available and conveniently predates welfare payments changes in response to the COVID-19 pandemic. By reporting on all income payments as well as individual payments this study has described the impact on different payment types such as unemployment, parenting, disability and study and training payments.

4.2. Limitations

Child protection system records only provide information on children who have been reported to the system. Some misclassification of persons between the CP and no CP groups, is inevitable through cases of maltreatment that went unreported, or where children were reported for abuse or neglect that had not occurred, or where persons had moved out of the state of SA before age 18, and their CP contact record was incomplete. In estimating Australian population weighted total budgetary burden, we assumed the proportion of children at each age with CP contact in South Australia applied nationally.

There are similarities between the Australian income support system and those in other countries such as the USA or UK (Ribanszki et al., 2022), where the main income support payments are for those who are unemployed and looking for work, studying, or unable to work due to a disability or other illness. All payments are means tested and not universally available. Thus, the finding of increasing gradient of income support payments by child protection system involvement is likely generalisable to other welfare states, where the government provides income support assistance to those in need (and meet pertinent eligibility criteria). The underlying mechanism by which individuals with a history of maltreatment suffer consequences is fundamental to the human condition and observed globally. As such, the budgetary burden relative to those with no maltreatment quantified in this study is globally applicable.

Creating the political will to shift resources towards prevention is critical if action to protect children is to occur, and better health, wellbeing outcomes and enhanced social and economic participation are to be realised. By describing receipt of income support payments and quantifying its budgetary impact on government, this study provides financial impetus to invest in those children exposed to child maltreatment (and their families) earlier in life.

CRediT authorship contribution statement

Emmanuel S. Gnanamanickam: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Leonie Segal:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization.

Declaration of competing interest

Both authors declare no competing interests.

Data sharing statement

The authors are not permitted to share project data due to privacy and ethical restrictions. Application for data may be made to SA-NT DataLink (https://www.santdatalink.org.au/application_process) and AIHW (https://www.aihw.gov.au/our-services/data-linkage) the data linkage organisations that linked and provided the data for this study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chiabu.2024.106925.

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