



## **Supporting Information**

### **Supplementary results**

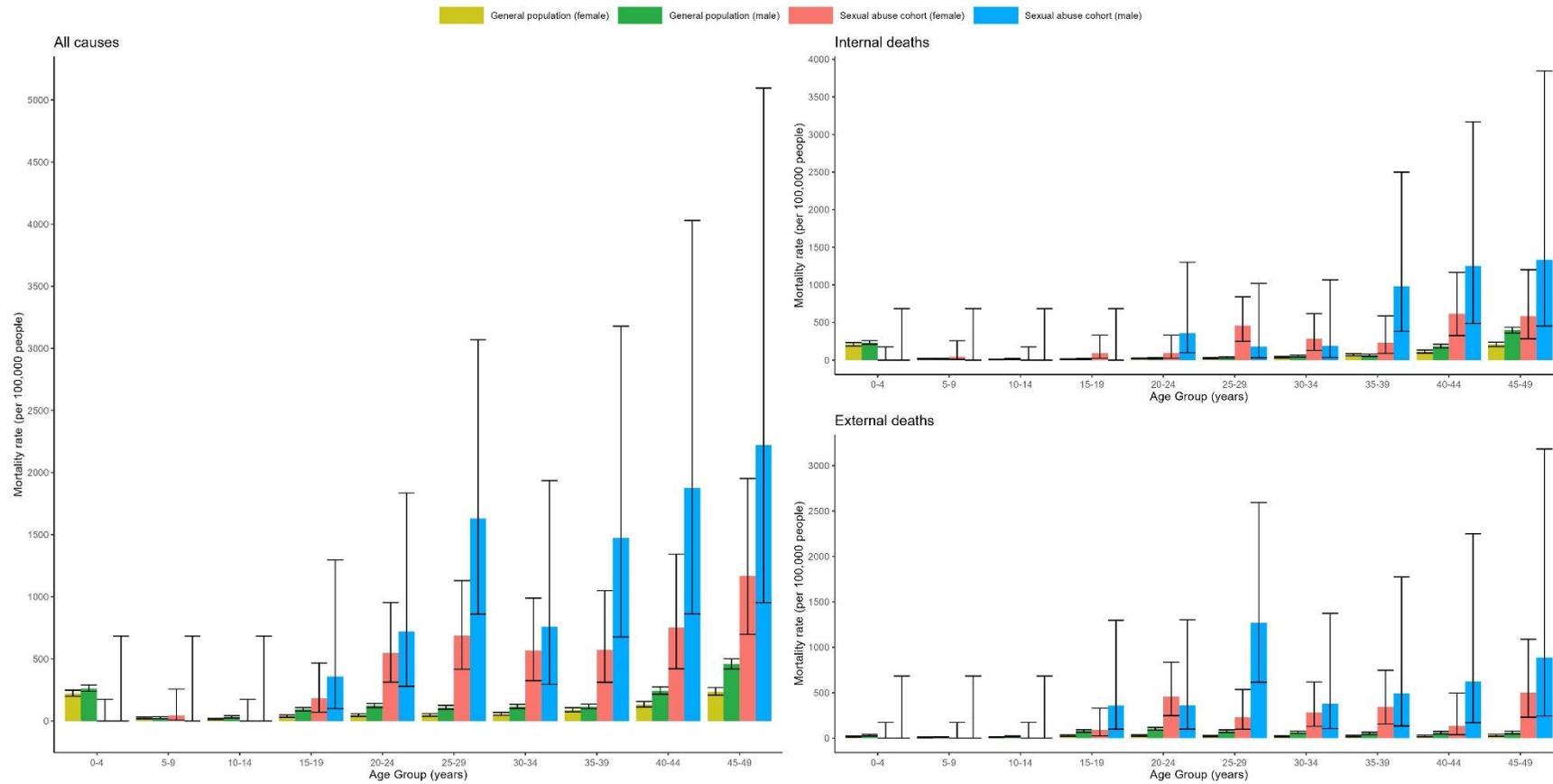
**This appendix was part of the submitted manuscript and has been peer reviewed.  
It is posted as supplied by the authors.**

Appendix to: Papalia N, Spivak BL, Ashford L, et al. Sexual abuse during childhood and all-cause mortality into middle adulthood: an Australian cohort study. *Med J Aust* 2023; doi: 10.5694/mja2.52089.

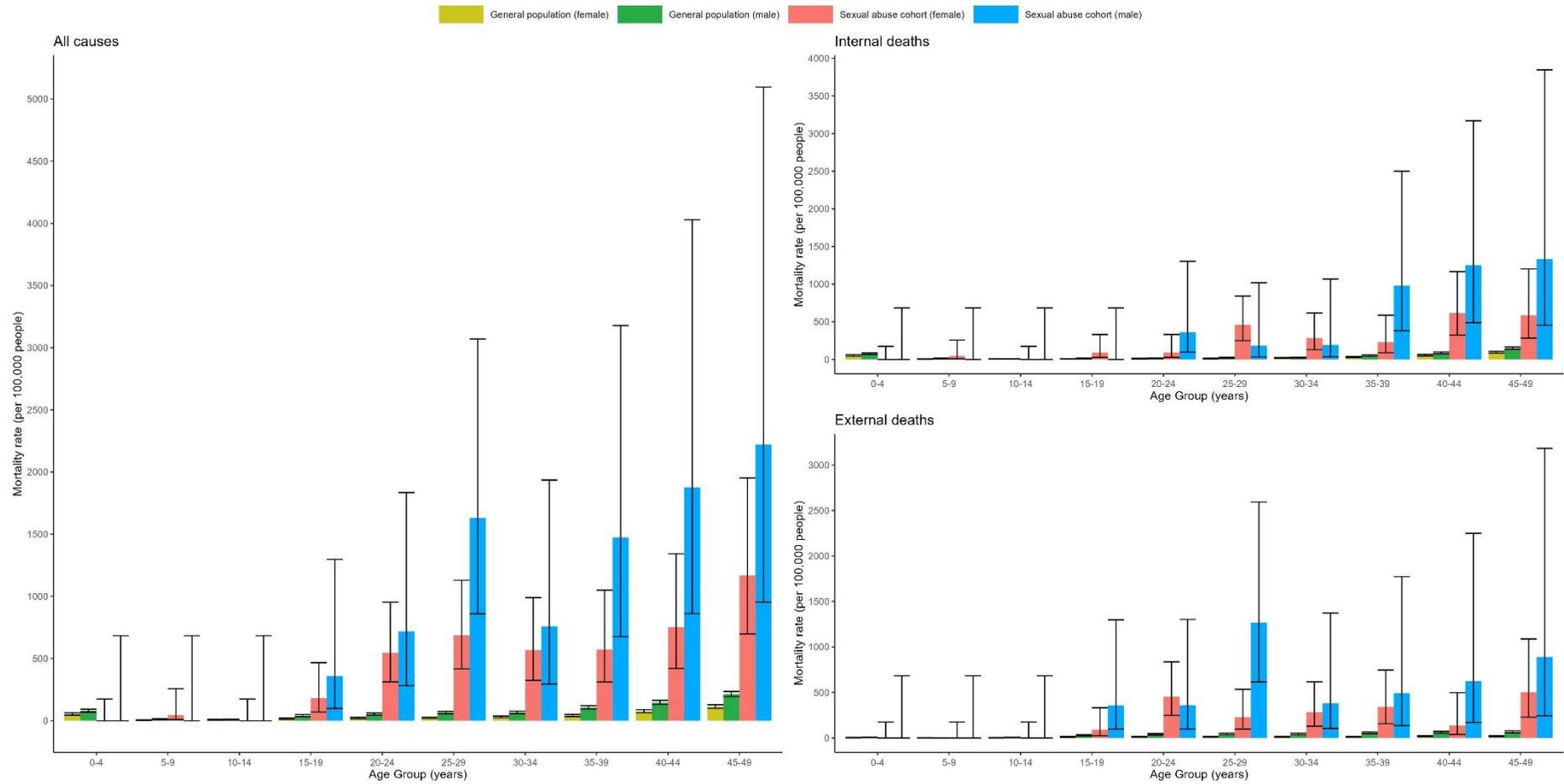
**Table 1.** Mortality rates (with 95% confidence intervals), for people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) and for the general Victorian population (reference year: 2001), by cause of death type, sex, and age group

Group/age group	Mortality rate (per 100,000) (95% confidence interval)		
	All-cause	Internal cause	External cause
General population (female)			
0–4	89.9 (75.6–106.1)	87.2 (73.2–103.2)	2.7 (0.9–6.4)
5–9	8.2 (4.6–13.7)	5.7 (2.8–10.4)	2.5 (0.9–6.0)
10–14	11.4 (7.0–17.6)	7.0 (3.7–12.0)	4.4 (2.0–8.7)
15–19	17.6 (12.0–25.1)	5.7 (2.8–10.3)	12.0 (7.4–18.3)
20–24	31.4 (23.6–41.1)	13.8 (8.9–20.6)	17.6 (12.0–25.1)
25–29	35.7 (27.7–45.4)	15.3 (10.3–21.9)	20.4 (14.5–27.9)
30–34	51.1 (41.7–62.1)	34.3 (26.7–43.4)	16.9 (11.8–23.5)
35–39	64.9 (54.1–77.2)	46.6 (37.6–57.2)	18.2 (12.8–25.2)
40–44	84.8 (72.2–98.9)	70.0 (58.7–82.9)	14.8 (10.0–21.2)
45–49	156 (137–175)	140 (123–159)	15.5 (10.4–22.4)
General population (male)			
0–4	126 (110–145)	117 (101–135)	9.6 (5.6–15.4)
5–9	13.9 (9.0–20.4)	11.4 (7.1–17.5)	2.4 (0.8–5.7)
10–14	9.7 (5.8–15.4)	4.9 (2.3–9.2)	4.9 (2.3–9.2)
15–19	60.4 (49.3–73.2)	14.0 (9.1–20.7)	46.3 (36.8–57.7)
20–24	88.4 (74.8–104)	20.3 (14.2–28.1)	68.1 (56.3–81.7)
25–29	98.9 (84.9–115)	19.7 (13.9–27.2)	79.3 (66.8–93.4)
30–34	108 (93.3–123)	39.3 (31.0–49.2)	68.2 (57.0–81.0)
35–39	131 (115–149)	78.0 (65.9–91.6)	53.3 (43.4–64.7)
40–44	151 (134–170)	104 (89.4–119)	47.6 (38.2–58.5)
45–49	217 (195–241)	174 (155–195)	42.8 (33.6–53.7)
Sexually abused (female)			
0–4	0.0 (0.0–114)	0.0 (0.0–114)	0.0 (0.0–114)
5–9	45.4 (4.9–212)	45.4 (4.9–212)	0.0 (0.0–114)
10–14	0.0 (0.0–114)	0.0 (0.0–114)	0.0 (0.0–114)
15–19	182 (61.4–432)	90.9 (18.9–291)	108 (18.9–291)
20–24	546 (299–924)	91.1 (18.9–292)	471 (234–806)
25–29	687 (402–1102)	458 (236–811)	229 (87.4–501)
30–34	568 (311–959)	284 (119–584)	284 (119–584)
35–39	572 (295–1013)	229 (77.3–543.2)	343.2 (143–706)
40–44	753 (401–1299)	616 (305–1121)	137 (28.5–438)
45–49	1169 (671–1901)	584 (262–1144)	501 (209–1029)
Sexually abused (male)			
0–4	0.0 (0.1–449)	0.0 (0.1–449)	0.0 (0.1–449)
5–9	0.0 (0.1–440)	0.0 (0.1–449)	0.0 (0.1–449)
10–14	0.0 (0.1–449)	0.0 (0.1–449)	0.0 (0.1–449)
15–19	358 (74.6–1145)	0.0 (0.1–449)	372 (74.6–1145)
20–24	719 (243–1702)	360 (74.8–1149)	360 (74.6–1149)
25–29	1630 (810–2954)	181 (19.6–843)	1268 (569–2474)
30–34	759 (257–1795)	190 (20.5–883)	380 (78.9–1212)
35–39	1474 (618–3013)	983 (333–2320)	491 (102–1567)
40–44	1875 (786–3824)	1250 (423–2945)	625 (130–1990)
45–49	2222 (853–4802)	1333 (377–3515)	889 (185–2821)

**Figure 1.** Mortality rates (with 95% confidence intervals), for people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) and for the general Victorian population (reference year: 1980), by cause of death type, sex, and age group



**Figure 2.** Mortality rates (with 95% confidence intervals), for people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) and for the general Victorian population (reference year: 2019), by cause of death type, sex, and age group



**Table 2.** Age- and sex-standardised mortality ratios (with 95% confidence intervals) for people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 1980), by cause of death type

Age group	All Cause		Internal Cause		External Cause	
	Female	Male	Female	Male	Female	Male
	SMR [95% CI]					
0-4	0	0	0	0	0	0
5-9	1.97 [0.00, 3.95]	0	2.85 [0.00, 5.70]	0	0	0
10-14	0	0	0	0	0	0
15-19	4.85 [2.42, 7.27]	3.87 [1.13, 6.60]	8.61 [2.52, 14.7]	0	3.37 [0.99, 5.75]	4.56 [1.33, 7.78]
20-24	11.6 [8.29, 13.8]	5.83 [2.91, 8.74]	4.73 [1.39, 8.08]	16.5 [4.84, 10.7]	16.5 [11.3, 21.7]	3.54 [1.04, 6.04]
25-29	14.4 [10.7, 18.1]	15.0 [10.0, 20.0]	17.0 [11.6, 22.4]	5.56 [0.00, 11.1]	11.1 [6.12, 16.0]	16.7 [10.4, 23.0]
30-34	10.1 [7.18, 13.0]	6.54 [3.27, 9.81]	7.57 [4.48, 10.7]	3.63 [0.00, 7.25]	15.1 [8.96, 21.3]	5.95 [1.74, 10.2]
35-39	6.45 [4.41, 8.50]	12.8 [7.55, 18.0]	3.35 [1.68, 5.03]	15.4 [7.72, 23.2]	16.9 [9.99, 23.8]	9.47 [2.77, 16.2]
40-44	5.66 [3.95, 7.36]	7.69 [4.55, 10.8]	5.53 [3.69, 7.38]	6.77 [3.39, 10.2]	6.31 [1.85, 10.8]	10.6 [3.10, 18.1]
45-49	4.94 [3.62, 6.25]	4.86 [2.68, 7.03]	2.82 [1.75, 3.89]	3.36 [1.42, 5.30]	16.9 [10.0, 23.8]	14.7 [4.30, 25.1]

SMR = standardised mortality ratio; CI = confidence interval.

**Table 3.** Age- and sex-standardised mortality ratios (with 95% confidence intervals) for people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 2019), by cause of death type

Age group	All Cause		Internal Cause		External Cause	
	Female	Male	Female	Male	Female	Male
	SMR [95% CI]					
0-4	0	0	0	0	0	0
5-9	13.0 [0.00, 26.0]	0	15.2 [0.00, 30.3]	0	0	*
10-14	0	0	0	0	0	0
15-19	11.6 [5.82, 17.4]	9.11 [2.67, 15.5]	16.9 [4.94, 28.8]	0	8.88 [2.60, 15.2]	12.8 [3.73, 21.8]
20-24	25.0 [17.8, 32.2]	13.8 [6.91, 20.7]	9.66 [2.84, 16.5]	28.3 [8.28, 48.3]	36.7 [25.1, 48.2]	9.14 [2.68, 15.6]
25-29	30.2 [22.4, 37.9]	24.8 [16.5, 33.0]	44.7 [30.5, 58.8]	8.08 [0.00, 16.2]	18.3 [10.1, 26.4]	29.2 [18.2, 40.3]
30-34	18.8 [13.4, 24.2]	11.4 [5.71, 17.1]	15.4 [9.08, 21.6]	8.13 [0.00, 16.3]	24.3 [14.4, 34.2]	8.79 [2.57, 15.0]
35-39	13.9 [9.50, 18.3]	13.8 [8.16, 19.4]	7.97 [3.99, 12.0]	19.1 [9.57, 28.7]	27.5 [16.3, 38.7]	8.85 [2.59, 15.1]
40-44	9.90 [6.92, 12.9]	12.8 [7.56, 18.0]	10.7 [7.16, 14.3]	14.5 [7.26, 21.8]	7.34 [2.15, 12.5]	10.3 [3.02, 17.6]
45-49	10.3 [7.55, 13.0]	10.4 [5.73, 15.0]	6.16 [3.83, 8.48]	8.96 [3.79, 14.1]	27.0 [16.0, 38.1]	13.6 [3.97, 23.1]

SMR = standardised mortality ratio. CI = confidence interval.

\* No deaths recorded in the general population or child sex abuse group.

**Table 4.** Age- and sex-adjusted mortality among people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 1980): incident rate ratios with 95% confidence intervals\*

Characteristic	All cause	Internal cause	External cause
Sexual abuse as child	5.12 [3.41, 7.70]	3.47 [2.04, 5.92]	8.71 [6.24, 12.16]
Sex (male)	1.75 [1.50, 2.04]	1.40 [1.18, 1.66]	2.80 [2.38, 3.28]
Age group (years)			
0-4	1	1	1
5-9	0.10 [0.06, 0.17]	0.07 [0.04, 0.13]	0.37 [0.22, 0.64]
10-14	0.10 [0.06, 0.16]	0.04 [0.02, 0.09]	0.64 [0.41, 0.99]
15-19	0.28 [0.20, 0.38]	0.06 [0.03, 0.11]	2.42 [1.72, 3.40]
20-24	0.38 [0.28, 0.50]	0.10 [0.06, 0.16]	3.05 [2.19, 4.26]
25-29	0.36 [0.26, 0.48]	0.15 [0.10, 0.23]	2.32 [1.64, 3.28]
30-34	0.38 [0.28, 0.51]	0.22 [0.15, 0.31]	1.96 [1.37, 2.80]
35-39	0.45 [0.33, 0.61]	0.32 [0.23, 0.44]	1.75 [1.20, 2.56]
40-44	0.82 [0.63, 1.06]	0.71 [0.54, 0.92]	1.89 [1.29, 2.78]
45-49	1.49 [1.19, 1.87]	1.42 [1.14, 1.76]	2.20 [1.51, 3.22]

\* All-cause and internal cause: quasi-Poisson models; external cause deaths: Poisson model.

**Table 5.** Age- and sex-adjusted mortality among people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 2019): incident rate ratios with 95% confidence intervals\*

Characteristic	All cause	Internal cause	External cause
Sexual abuse as child	11.9 [8.91, 15.8]	8.70 [5.88, 12.9]	17.1 [13.0, 22.5]
Sex (male)	2.07 [1.84, 2.34]	1.57 [1.36, 1.82]	3.35 [2.91, 3.85]
Age group (years)			
0-4	1	1	1
5-9	0.11 [0.06, 0.20]	0.11 [0.07, 0.20]	0.08 [0.01, 0.58]
10-14	0.12 [0.07, 0.21]	0.09 [0.05, 0.17]	0.65 [0.27, 1.56]
15-19	0.44 [0.31, 0.61]	0.14 [0.08, 0.24]	6.37 [3.54, 11.5]
20-24	0.62 [0.47, 0.81]	0.19 [0.12, 0.29]	9.08 [5.15, 16.0]
25-29	0.75 [0.58, 0.97]	0.30 [0.21, 0.41]	9.74 [5.54, 17.1]
30-34	0.79 [0.61, 1.02]	0.36 [0.26, 0.49]	9.35 [5.31, 16.5]
35-39	1.19 [0.94, 1.52]	0.67 [0.51, 0.88]	11.6 [6.60, 20.4]
40-44	1.79 [1.43, 2.24]	1.21 [0.95, 1.54]	13.2 [7.53, 23.3]
45-49	2.63 [2.13, 3.25]	2.02 [1.62, 2.51]	14.5 [8.26, 25.4]

\* All-cause and internal cause deaths: quasi-Poisson models; external cause deaths: Poisson model.

**Table 6.** Age- and sex-adjusted mortality among people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 1980), including term for type of abuse (penetrative or non-penetrative): incident rate ratios with 95% confidence intervals\*

Characteristic	All cause	Internal cause	External cause
Type of child sexual abuse			
Non-penetrative	4.42 [2.44, 8.02]	3.45 [1.62, 7.34]	6.20 [3.72, 10.3]
Penetrative	5.51 [3.70, 8.20]	3.48 [2.02, 6.01]	10.24 [7.47, 14.0]
Sex (male)	1.75 [1.54, 1.90]	1.40 [1.21, 1.61]	2.81 [2.46, 3.20]
Age group (years)			
0-4	1	1	1
5-9	0.10 [0.07, 0.15]	0.07 [0.05, 0.12]	0.37 [0.24, 0.58]
10-14	0.10 [0.07, 0.15]	0.04 [0.02, 0.08]	0.64 [0.44, 0.93]
15-19	0.28 [0.21, 0.36]	0.06 [0.04, 0.10]	2.42 [1.83, 3.19]
20-24	0.38 [0.30, 0.48]	0.10 [0.07, 0.15]	3.05 [2.33, 4.01]
25-29	0.36 [0.28, 0.46]	0.15 [0.11, 0.21]	2.32 [1.75, 3.08]
30-34	0.38 [0.30, 0.49]	0.22 [0.16, 0.29]	1.96 [1.46, 2.62]
35-39	0.45 [0.35, 0.58]	0.32 [0.24, 0.42]	1.75 [1.28, 2.39]
40-44	0.82 [0.66, 1.01]	0.71 [0.57, 0.88]	1.89 [1.38, 2.59]
45-49	1.49 [1.24, 1.80]	1.42 [1.18, 1.70]	2.20 [1.61, 3.00]

\* All-cause and internal cause deaths: quasi-Poisson models; external cause deaths: Poisson model.

**Table 7.** Age- and sex-adjusted mortality among people sexually abused as children in Victoria (1964–1995) who died before the age of 50 years (1980–2020) compared with the general Victorian population (reference year: 2019), including term for type of abuse (penetrative or non-penetrative): incident rate ratios with 95% confidence intervals\*

Characteristic	All cause	Internal cause	External cause
Type of child sexual abuse			
Non-penetrative	10.2 [6.65, 15.8]	8.64 [4.88, 15.3]	12.4 [7.41, 20.6]
Penetrative	12.8 [9.54, 17.0]	8.75 [5.78, 13.2]	19.9 [14.53, 27.4]
Sex (male)	2.07 [1.87, 2.30]	1.57 [1.39, 1.78]	3.36 [2.92, 3.87]
Age group (years)			
0-4	1	1	1
5-9	0.11 [0.07, 0.18]	0.11 [0.07, 0.18]	0.08 [0.01, 0.58]
10-14	0.12 [0.07, 0.19]	0.09 [0.05, 0.15]	0.65 [0.27, 1.56]
15-19	0.44 [0.33, 0.58]	0.14 [0.09, 0.22]	6.37 [3.54, 11.5]
20-24	0.62 [0.49, 0.78]	0.19 [0.13, 0.27]	9.08 [5.15, 16.0]
25-29	0.75 [0.60, 0.93]	0.30 [0.22, 0.40]	9.74 [5.53, 17.1]
30-34	0.79 [0.63, 0.98]	0.36 [0.27, 0.47]	9.35 [5.30, 16.5]
35-39	1.19 [0.98, 1.46]	0.67 [0.53, 0.85]	11.6 [6.59, 20.4]
40-44	1.79 [1.47, 2.17]	1.21 [0.98, 1.49]	13.2 [7.52, 23.2]
45-49	2.63 [2.20, 3.15]	2.02 [1.67, 2.43]	14.5 [8.24, 25.4]

\* All-cause and internal cause deaths: quasi-Poisson models; external cause deaths: Poisson model.