Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Temporal Aspects of Child Homicide in Australia

Amber C McKinley,* Rachel MacCulloch, and Martin Lark

ABSTRACT

Using National Homicide Monitoring Program data from 1989 to 2012, this study examined the temporal aspects of child homicide in Australia. It was hypothesised that there would be daily and weekly variation in the occurrence of child homicide, with peaks in the late afternoon, evening, and early hours of the morning and on Fridays, Saturdays and Sundays. It was also hypothesised that the number of child homicides would be evenly distributed across seasons. The sample consisted of 916 children (aged 0–17) killed in 802 homicide incidents in Australia between 1989 to 2012. Data relating to time of day, and day of the week, were analysed using a chi-square test, followed with calculations of incidence ratios and 95% confidence intervals. Data relating to season of the year were examined descriptively, due to uncontrollable factors preventing significance testing. Results partially supported the hypotheses. There was daily and weekly variation in the occurrence of child homicide, with peaks in the evening hours and on Saturdays; however, no peaks were observed on Fridays and Sundays. Additionally, the hypothesis that child homicides peak in the late afternoon and early hours of the morning was unable to be accepted or rejected due to grouping issues. The study also found slight seasonal variation in the occurrence of child homicide, with a slight peak in spring; however, whether this peak is significant is unknown.

Keywords: child homicide, temporal aspects, time of day, day of week, season, Australia

TEMPORAL ASPECTS OF CHILD HOMICIDE IN AUSTRALIA

Even though child homicide is a relatively rare event, comprising only 13% of all homicides in Australia in 2010–12 (Bryant & Cussen, 2015), it has received a reasonable amount of attention from Australian researchers. This is because it is still a leading cause of injury death for Australian children. It ranks third among all causes of injury deaths for children, with the two most common being transport-related deaths and accidental drowning (AIHW, 2012).

* Corresponding author: amckinley@csu.edu.au

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Additionally, although the child homicide rate in Australia is declining, it is not declining at the same rate as the general homicides (Bryant & Cussen, 2015).

The unlawful killing of children has also always evoked strong emotions from the public and attracted widespread media attention, making people more inclined to study it. However, most of the research conducted in Australia has examined the characteristics of filicides or the more common characteristics of child homicides in general. A search of the literature failed to reveal any studies that have examined the temporal aspects of child homicides; that is, those aspects related to time, such as time of the day, day of the week, and month of the year. International research suggests that child homicides do differ among many of these variables, and that this data can be used to better inform authorities about high-risk periods and triggers. This study sought to do the same in Australia.

LITERATURE REVIEW

Characteristics of Child Homicides

Research conducted both in Australia and overseas has consistently found that the victims of child homicide are more likely to be younger than older and have an almost equal chance of being male or female (Abel, 1986; Bryant & Cussen, 2015; Chew et al., 1999; Dolan et al., 2003; Strang, 1996; Yarwood, 2004). It has also consistently found that many child homicide offenders are either related to the victim (biologically or by marriage; usually a parent) or a friend/acquaintance of the victim, with the former being most common (Abel, 1986; Chew et al., 1999; Cussen & Bryant, 2015; Dolan et al., 2003; Mouzos & Houliaras, 2006; Mousoz & Rushforth, 2003; Paulson & Rushforth, 1986; Strang, 1996; Yarwood, 2004). They are also more likely to be male than female (Nielssen et al., 2009; Paulson & Rushforth, 1986; Strang, 1996). Finally, research has consistently found that child homicides most commonly occur in a residential location (most frequently the victim's home) and most commonly involve the victim being beaten to death or killed with a firearm (Abel, 1986; Chew et al., 1999; Cussen & Bryant, 2015; Dolan et al., 2003; Mouzos & Houliaras, 2006; Mousoz & Rushforth, 2003; Paulson & Rushforth, 1986; Strang, 1996; Yarwood, 2004).

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Temporal Aspects of Child Homicides

Time of Day. Dolan, Guly, Woods, and Fullam (2003) examined the temporal aspects of child homicides (ages 0 - 16) committed by males in the UK between 1967 and 1988. They found that most incidents (54/64; 84%) occurred between 12pm and 2am, and that the time of highest risk was between 5pm and 10pm (23/64; 36%), closely followed by 10pm to 2am. These findings support those from an earlier study by Paulson and Rushforth (1986) that examined the temporal aspects of child homicides (0–15 years) committed in Cuyahoga County, Ohio, between 1958 and 1982. That study found that victims aged 0–5 were most commonly killed between 7–9pm (~19%), closely followed by 4–6pm (~18%), 1–3pm (~16%) and 10–12pm (noon; ~17%). Additionally, victims aged 5–9 were most commonly killed between 7–9pm (~24%), closely followed by 4–6pm (~23%). Moreover, victims aged 10–14 were most commonly killed between 1–3am (~21%), closely followed by 4–6pm (~18%), 7–9pm (~15%) and 10–12am (midnight; ~14%).

The findings from the above studies also support those from a large-scale study by Chew, McCleary, Lew, and Wang (1999), which examined the temporal aspects of child homicides (ages 0–15) committed in California between 1981 and 1990. That study found that child homicide incidents were most commonly committed between 12pm and 8pm (as opposed to between 8pm and 4am, and 4am and 12pm). Overall, these findings suggest that children are most commonly killed in the late afternoon, evening, and early hours of the morning. Several possible explanations have been put forward for this, including that these periods are the ones where victims and offenders are likely to have the most contact (e.g., not be sleeping or at school/work), where older victims and offenders are most likely to have been drinking/consuming drugs, and where victims and offenders are most likely to be tired and irritable (Chew et al., 1999; Dolan et al., 2003; Paulson & Rushforth, 1986).

Day of Week. In their study, Dolan et al. (2003) found that child homicide incidents (0–16 years) were most commonly committed on Saturdays (15/64; 23%), closely followed by Sundays (12/64; 19%) and Fridays (10/64; 16%). These findings support those from an earlier study by Abel (1986) that looked at the temporal aspects of child homicides (0–15 years) committed in Erie County, New York, between 1972 and 1984. That study found that homicide incidents involving children were most commonly committed on Saturdays (24%), closely followed by Mondays (18%), Fridays (15%), and Sundays (15%). The findings

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

of that study are supported by a study by Lucas et al. (2002), which examined the temporal aspects of (abuse-related) filicides committed by military personnel in the US between 1985 and 1997. That study found that a disproportionate number of incidents involving infants (0–1 years; 47%), young children (1–4 years; 52%), and older children (4–15 years; 50%) were committed on weekends. These findings are also supported by Schmidt et al. (1996: Saturdays: 31%, Sundays: 25%). It is important to note that the study by Lucas et al. (2002) did not present its data by the day of the week (i.e., it was presented by weekday vs. weekend), so the days with the highest frequencies for each age group and overall are unknown.

Explanations regarding why child homicides may most commonly occur on weekends are like those put forward for why child homicides most commonly occur in the late afternoon, evening, and early hours of the morning; namely that these periods are the ones where victims and offenders are likely to have the most contact and where older victims and offenders are most likely to have been drinking/consuming drugs (Chew et al., 1999; Dolan et al., 2003; Paulson & Rushforth, 1986).

Season. Homicides have been known to rise in the summer months and drop in winter (Bryant & Cussen, 2015; Chan & Payne, 2013; Falk & Falk, 1990); however, this does not seem to apply to child homicides. A study by Laskey et al. (2010) examined the temporal aspects of child homicides (ages 0–5) committed in five US states between 1999 and 2006, found that the number of child homicide incidents did not vary significantly by season or month. These findings contrast with a study by McCleary and Chew (2002) that examined the temporal aspects of child homicides (ages 0–15) committed in the US between 1976 and 1998. That study found that homicides involving young children (0–5) peaked in winter, while homicides involving older children (5–14) peaked in summer. They also found that the number of homicides involving children in general (0–15) did not vary significantly by season. The latter finding supports results from a study by Goetting (1990), which examined the temporal aspects of child homicides (ages 0–15) committed in Detroit, Michigan, in 1982 and 1983. That study found that the number of homicide incidents involving children did not significantly vary by season.

These findings suggest that homicides involving children in general are almost equally likely to occur in any season. This may be because the homicides of younger children peak in winter and the homicides of older children peak in

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

summer and, when these data are combined, homicides involving children are somewhat evenly distributed across seasons. This is plausible if the findings from the study by McCleary and Chew (2002) can be applied to child homicides in general, which is possible given that Laskey et al. (2010) stated that their non-significant result for children under the age of five may have been caused by their sample size, which was smaller than the one used by McCleary and Chew (2002), or their dataset which was different to the one used by those authors.

The summer peak in the homicides of older children (5–14) could be explained by summer breaks increasing the amount of contact between victims and offenders, the increase in drug and alcohol use by individuals in summer (Fitzgerald & Mulford, 1986; Puljula et al., 2007; Uitenbroek, 1996), and the increase in aggression often experienced by people in warmer months (Anderson, 2001; Geen & Donnerstein, 1998). The winter peak in the homicides of younger children (0–4) is more difficult to explain; however, it is important to note that illnesses/other causes of death for children in this age group also peak in winter (e.g., sudden infant death syndrome, influenza, and meningococcal; Byard, 2004; Fleming, Pannell, & Cross, 2005; MacDorman & Rosenberg, 1993). This would make young children easier to kill during this time, provide parents with a possible explanation for the death of their child, and increase the likelihood of parents snapping and killing their child (e.g., due to children being more irritable when sick, demanding more from their parents, and/or crying or screaming in pain).

METHOD

Aim and Hypotheses

The aim of this study was to examine the temporal aspects of child homicide in Australia. It was hypothesised that there would be daily and weekly variation in the occurrence of child homicide, with peaks in the late afternoon, evening, and early hours of the morning and on Fridays, Saturdays and Sundays. It was also hypothesised that the number of child homicides would be evenly distributed across seasons.

Sample

The sample consisted of 916 children (aged 0–17) killed in 802 reported homicide incidents in Australia between 1 July 1989 to 30 June 2012. The distribution of their ages is presented in Table 1. It is important to point out that

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

this number is likely to represent an underestimation of the number of children killed during this period, as homicides involving younger children (<5 years of age) sometimes go unreported. This is because, for this age group, some natural and unnatural causes of death are difficult to distinguish (e.g., children who die from sudden infant death syndrome are difficult to distinguish from those who die from being smothered; Finkelhor & Ormrod, 2001; Riedel & Welsh, 2015; Yarwood, 2004).

Table 1—Solved and Unsolved Homicides Involving Child Victims by Age

Age Group	Solved	Unsolved	Total
Under 1	173	29	202
1–9	369	22	391
10–14	100	10	110
15–17	199	11	210
Unknown/Not Stated	3	0	3
Total	844	72	916

Source: AIC NHMP 1989/90–2011/12 [computer file]

Procedure

A request was made to the National Homicide Monitoring Program (NHMP) at the Australian Institute of Criminology (AIC) for all temporal-related child homicide data collected by them since their formation (1 July 1989). The study also requested data relating to homicide location and victim-offender relationship, which it considered was necessary to present for contextual reasons.

The data received was in the form of pre-tabulated descriptive statistics separated into solved and unsolved homicides with missing numbers (shown as *n.p.*) where the numbers were less than five and could have identified the individual case. A totals column was added to each table, with possible totals presented in rows where the unsolved and/or solved column contained an *n.p.* The months that child homicides were committed were also grouped by season,

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

and two tables examining victim-offender relationship were combined. Following this, a chi-square goodness-of-fit test was conducted to see whether child homicides were evenly distributed across the day. This was then repeated for day of week.

Although there was strong interest in also conducting this test for season of year, it was not possible due to the amount of missing data. After this, and in line with Tiihonen et al. (1997), Laskey et al. (2010), and Shinsugi et al. (2015), incidence ratios and 95% confidence intervals were calculated for each time period/day of the week. This was done to find out which time periods contained significantly more or less homicides than expected. Incidence ratios were calculated by dividing the observed number of homicides by the expected number of homicides and 95% confidence intervals were calculated using the Eurocat organisation's (2016) online tool. The number of homicides in a time period were considered to have significantly deviated from what was expected when 1 was not contained in their confidence interval.

RESULTS

Table 2 shows that the majority of child homicides occurred in a residential location, most commonly the victim's home (n = 509; 56%). Of note is that almost 10% of these reports (n = 44) were listed as unsolved. Additionally, of the 916 deaths reported, 533 (58%) were carried out by a parent or carer (filicide; see Table 3). A further significant number were committed by friends/ acquaintances (n = 164; 18%). Child homicides committed by strangers accounted for 69 (8%) of reported cases.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Table 2—Solved and Unsolved Homicides Involving Child Victims by Location

Location	Solved	Unsolved	Total
Victim's Home	465	44	509
Offender's Home	70	n.p.	71–74
Other Person's Home	24	n.p.	25–28
Hospital/Health Care Institution	n.p.	0	1–4
Shop/Shopping Mall	5	n.p.	6–9
Car Park/Public Garage/Service Station	11	0	11
Recreation/Food Venue	10	0	10
Public Transport	n.p.	0	1–4
Public Transportation Connected Facilities	6	0	6
Workplace/School	n.p.	n.p.	2–8
Private Motor Vehicle	53	n.p.	54–57
Street/Road/Highway	61	n.p.	62–65
Sporting Oval/Facility	n.p.	0	1–4
Open Area/Waterway	99	15	114
Other Location	29	n.p.	30–33
Unknown/Not Stated	n.p.	n.p.	2–8
Total	844	72	916

Note. n.p. = not provided (cell size <5). Solved and unsolved homicides are primarily provided to show where the possible totals were derived from. Source: AIC NHMP 1989/90–2011/12 [computer file].

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Table 3—Solved and Unsolved Homicides Involving Child Victims by Victim–Offender Relationship

Victim–Offender Relationship	Solved	Unsolved	Total
Domestic	593	6	599
Intimate Partner	28	0	28
Filicide	527	6	533
Siblicide	15	0	15
Other Family	23	0	23
Friend/Acquaintance	163	1	164
Close Friend	46	0	46
Acquaintance	79	1	80
Acquaintance/Neighbour	n.p.	0	1–4
Acquaintance—less than 24 hours	8	0	8
Relationship Rival	n.p.	0	1–4
Gang Member	5	0	5
Other	20	0	20
Stranger	68	1	69
Unknown	20	64	84
Total	844	72	916

Note. n.p. = not provided (cell size <5). Source: AIC NHMP 1989/90–2011/12 [computer file].

Table 4 shows a significant association between time of day and the rate of child homicides, $\chi 2$ (3, N = 837) = 27.66, p < .001. The 95% confidence intervals indicate that significantly more homicides than expected occurred between 6:00pm and 11:59pm (*IR* = 1.17, *95% CI* = 1.02–1.32) and significantly less than expected occurred between 6:00am and 11:59am (*IR* = 0.69, *95% CI* = 0.58-0.81). The number that occurred between 12:00am and 5:59am (*IR* = 1.06, *95% CI* = 0.92–1.20) and 12:00pm and 5:59pm (*IR* = 1.08, *95% CI* = 0.95–1.23) was higher, but not significantly different to what was expected.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Table 4—Chi Square and Post Hoc Test Results: Time of Day

Time of day	Observed *N*	Expected *N*	Residual	Ratio	95% CI
12:00–5:59am	221	209.25	11.75	1.06	0.92-1.20
6:00–11:59am	145	209.25	-64.25	0.69	0.58-0.81*
12:00–5:59pm	227	209.25	17.75	1.08	0.95-1.23
6:00–11:59pm	244	209.25	34.75	1.17	1.02-1.32*
Total	837				

Note. χ^2 (3, N = 837) = 27.66, p < .001. Residual = Observed N - Expected N. Ratio = Observed N/Expected N.

There was also a significant association between the day of the week and rate of child homicides, χ^2 (6, N = 906) = 24.38, p < .001 (see Table 5). The 95% confidence intervals indicate that significantly more homicides than expected occurred on Saturday (*IR* = 1.24, *95% CI* = 1.05–1.44) and significantly less than expected occurred on Tuesday (*IR* = 0.72, *95% CI* = 0.58–0.87). There was no significant difference between the number of observed and expected homicides for any other day of the week.

Table 5—Chi Square and Post Hoc Test Results: Day of Week

	Observed N	Expected N	Residual	Ratio	95% CI
Monday	152	129.43	22.57	1.17	1.00–1.37
Tuesday	93	129.43	-36.43	0.72	0.58–0.87*
Wednesday	112	129.43	-17.43	0.87	0.71–1.03
Thursday	126	129.43	-3.43	0.97	0.81–1.15
Friday	126	129.43	-3.43	0.97	0.81–1.15
Saturday	160	129.43	30.57	1.24	1.05–1.44*
Sunday	137	129.43	7.57	1.06	0.89–1.24
Total	906				

Note. χ^2 (6, N = 906) = 24.38, p < .001. Residual = Observed N - Expected N. Ratio = Observed N/Expected N.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Table 6 shows child homicides most commonly occurred in spring (*n* = 249–252), followed by winter (*n* = 235–238) and summer (*n* = 230–233). Autumn contained the least number of child homicides with 191. Whether any of these numbers represent a significant departure from what one would expect is unknown (because the chi square and post hoc testing was unable to be completed due to the missing data). An examination of the frequency distribution suggests that it is unlikely except for autumn and potentially spring.

Table 6—Solved and Unsolved Homicides Involving Child Victims by Season

Month	Solved	Unsolved	Total
Summer	216	14–17	230–233
December	63	7	70
January	77	n.p.	78–81
February	76	6	82
Autumn	169	22	191
March	59	6	65
April	60	6	66
May	50	10	60
Winter	221	14-17	235–238
June	65	7	72
July	80	6	86
August	76	n.p.	77–80
Spring	235	14-17	249–252
September	70	n.p.	71–74
October	82	6	88
November	83	7	90
Unknown/not stated	3	n.p.	4–7
Total	844	72	916

Note. n.p. = not provided (cell size <5). Source: AIC NHMP 1989/90–2011/12 [computer file].

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

DISCUSSION

This study examined the temporal aspects of child homicide in Australia. It was hypothesised that there would be daily and weekly variation in the occurrence of child homicide, with peaks in the late afternoon, evening, and early hours of the morning and on Fridays, Saturdays and Sundays. It was also hypothesised that the number of child homicides would be evenly distributed across seasons. The results partially supported the hypotheses. There was daily variation in the occurrence of child homicide, with a peak in the evening hours (6:00–11:59pm) and a trough in the mid-to-late morning (6:00–11:59am).

The hypothesis that child homicides also peak in the late afternoon and early hours of the morning was unable to be confirmed or denied due to the how the data the authors received was grouped. It seems plausible that they would if looked at in isolation. The study also found weekly variation in the occurrence of child homicide, with a peak on Saturdays and a trough on Tuesdays. However, no peaks were observed on Sundays and Fridays. There was also slight seasonal variation in the occurrence of child homicide, with a slight peak in spring and a slight trough in autumn. However, whether these peaks and troughs represent significant departures from the average is unknown. Thus, the hypothesis that child homicides are evenly distributed across the seasons could not be confirmed or denied.

The findings obtained in this study for time of day largely support those from previous research (Chew et al., 1999; Dolan et al., 2003; Paulson & Rushforth, 1986). It is likely that child homicides peak in the evening hours because this period represents the one where victims and offenders are most likely to be in contact (i.e., not be sleeping or at school/work), where older victims and offenders are most likely to have been drinking/consuming drugs, and where victims and offenders are most likely to be tired and irritable (Chew et al., 1999; Dolan et al., 2003; Paulson & Rushforth, 1986). Additionally, it is likely that child homicides occur with the lowest level of frequency during the mid-to-late morning for the opposite reason.

The findings relating to the day of the week partially support those from previous research (Abel, 1986; Dolan et al., 2003; Lucas et al., 2002, Schmidt et al., 1996). These studies found that child homicides peak on Saturdays and Sundays, with two also finding that they peak on Fridays (Abel, 1986; Dolan et al., 2003). Nevertheless, it should be noted that none of these studies employed

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

the use of significance testing so whether these peaks were significant is unknown. This may explain why their findings do not mirror those found here. As mentioned previously, child homicides likely peak on Saturdays because this day represents one of two where victims and offenders generally have the most contact and where older victims and offenders are most likely to have been drinking/consuming drugs (Chew et al., 1999; Dolan et al., 2003; Paulson & Rushforth, 1986). The other day for high victim-offender contact and drug/alcohol use is Sunday. Drug and alcohol use is not quite as high on this day, however, which may explain why it was not also identified as a peak period.

The finding that child homicides trough on Tuesdays is more difficult to explain. It may represent the day that people are most settled into their week (i.e., are not mourning the end of the weekend and not anticipating the start of the next). The fact that studies have found that it is the day that people are least likely to consume alcohol and one of the least common days for committing alcohol-related violence may also help explain it (ABS, 2013; Boogaerts et al., 2016; Foster et al., 2015). Alternatively, it could just be an anomaly.

The results relating to season of the year neither support nor contrast with those from previous research (Goetting, 1999; Laskey et al., 2010; McCleary & Chew, 2002). This is because all previous studies employed significance testing, while this study was unable to. If significance testing was performed on the current data, it appears that the results would either show no seasonal variation in the occurrence of child homicide or seasonal variation, with a peak in spring and/or a trough in autumn. The former seems more likely and would be in line with previous findings.

This study had several limitations. Firstly, the authors had no access to the raw data and thus had no control over how the data were categorised and organised. This prevented them from being able to determine whether child homicides peak in the late afternoon and early hours of the morning. Secondly, due to the number of *n.p.*s in the seasonal data, the authors were unable to perform a chi-square test (and any necessary follow-up testing) on season of the year. Finally, due to issues with underreporting, the dataset may not have captured all child homicides that occurred in Australia during the examined period. This, along with the fact that all examined variables contained some 'unknowns', may have affected the accuracy of the results.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

It would have been beneficial if the study could have established: 1) whether child homicides peaked in the afternoon and early hours of the morning; 2) whether there is a seasonal variation in the occurrence of child homicide in Australia; and, 3) whether day and day of week together made a difference. Such findings could provide authorities with a more complete picture of the temporal nature of child homicides in Australia. Nonetheless, this study provides insights into a leading cause of death for Australian children. It is hoped that the results of this study can be used to inform authorities about high-risk periods and triggers, leading to practice changes and/or refinement in interventions.

ABOUT THE AUTHORS

Dr Amber McKinley, BLibSt, MCJ, PhD is an Applied Victimologist and lecturer at the Australian Graduate School of Policing and Security, Charles Sturt University, Canberra. She is also a Squadron Leader (specialist reserve) in the Royal Australian Air Force and works with Australia Defence Force investigators as an Applied Victimologist. She teaches and researches an number of subjects, including applied victimology, homicide-solvability, criminal behaviours, forensic victimology and criminalistics.

Rachel MacCulloch, BSc, MSc, is a General Research Academic at the Australian Graduate School of Policing and Security, Charles Sturt University. Her research interests include homicide solvability, clearance rates, victimology and police officer recruitment and retention. Ms MacCulloch's academic background is in Psychology (Australian National University) and Organisational Psychology (University of Leicester).

Martin Lark, MLM(Pol&Sec), is a Major in the Australian Defence Force whose current appointment is Provost Marshal at the Headquarters Joint Operations Command, Bungendore, New South Wales. Mr Lark served 32 years in the British Army's Royal Military Police, 25 years of which were in the Special Investigation Branch. During this time, he undertook operational tours in Northern Ireland, Bosnia, and Kosovo.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

REFERENCES

Abel, E. L. (1986). "Child Homicide in Erie County, New York." *Pediatrics, 77*, 709–713.

Anderson, C. A. (2001). "Heat and Violence." *Current Directions in Psychological Science, 10,* 33–38.

Australian Bureau of Statistics. (2013). *Australian Health Survey: Alcohol*. Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4363.0.55.001Chapter4

Australian Institute of Health and Welfare (AIHW). (2012). *A Picture of Australia's Children 2012*. Retrieved from www.aihw.gov.au/publication-detail/?id=10737423343

Boogaerts, T., Covaci, A., Kinyua, J., Neels, H., & van Nuijs, A.L.N. (2016). "Spatial and Temporal Trends in Alcohol Consumption in Belgian Cities: A Wastewater-Based Approach. *Drug and Alcohol Dependence, 160,* 170–176.

Bryant, W., & Cussen, T. (2015). *Homicide in Australia: 2010–11 to 2011–12: National Homicide Monitoring Program Report.* Canberra, Australia: Australian Institute of Criminology.

Byard, R. W. (2004). *Sudden Death in Infancy, Childhood and Adolescence* (2nd ed.). Cambridge, UK: Cambridge University Press.

Chan, A., & Payne, J. (2013). *Homicide in Australia: 2008–09 to 2009–10 National Homicide Monitoring Program Annual Report.* Canberra, Australia: Australian Institute of Criminology.

Chew, K.S.Y., McCleary, R., Lew, M.A., & Wang, J.C. (1999). "The Epidemiology of Child Homicide in California, 1981 through 1990." *Homicide Studies, 3,* 151–169.

Cussen, T., & Bryant, W. (2015). "Domestic/Family Homicide in Australia. *Research in Practice*. Canberra: Australian Institute of Criminology.

Dolan, M., Guly, O., Woods, P., & Fullam, R. (2003). "Child Homicide." *Medicine, Science and the Law, 43,* 153–169.

Eurocat. (2016). *A Simple Statistical Test and Calculator*. Retrieved from http://www.eurocat-network.eu/asimplestatisticaltest

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Falk, G., & Falk, C. (1990). *Murder: An Analysis of its Forms, Conditions, and Causes.* Jefferson, NC: McFarland & Company.

Foster, S., Gmel, G., Estévez, N., Bähler, C., & Mohler-Kuo, M. (2015). "Temporal Patterns of Alcohol Consumption and Alcohol-Related Road Accidents in Young Swiss Men: Seasonal, Weekday and Public Holiday Effects. *Alcohol and Alcoholism, 1,* 1–8.

Finkelhor, D., & Ormrod, R. (2001). *Homicides of Children and Youth.* Washington, DC: US Department of Justice.

Fitzgerald, J.L., & Mulford, H.A. (1986). "Drinking Frequency Changes in Selected Contexts by Season in Iowa, 1979–1980. *Journal of Studies on Alcohol, 47,* 311–315.

Fleming, D.M., Pannell, R.S., & Cross, K.W. (2005). Mortality in Children from Influenza and Respiratory Syncytial Virus. *ournal of Epidemiology and Community Health, 59,* 586–590.

Geen, R.G., & Donnerstein, E. (1998). *Human Aggression: Theories, Research, and Implications for Social Policy.* San Diego, CA: Academic Press.

Goetting, A. (1990). "Child Victims of Homicide: A Portrait of their Killers and the Circumstances of their Deaths. *Violence and Victims, 5,* 287–296.

Laskey, A.L., Thackeray, J.D., Grant, S.R., & Schnitzer, P.G. (2010). "Seasonality of Child Homicide. *The Journal of Pediatrics, 157,* 144–147.

Lucas, D.R., Wezner, K.C., Milner, J.S., McCanne, T.R., Harris, I.N., Monroe-Posey, C., & Nelson, J.P. (2002). "Victim, Perpetrator, Family, and Incident Characteristics of Infant and Child Homicide in the United States Air Force." *Child Abuse & Neglect, 26,* 167–186.

MacDorman, M.F., & Rosenberg, H.M. (1993). "Trends in Infant Mortality by Cause of Death and Other Characteristics, 1960–88. *Vital and Health Statistics, Series 20: Data from the National Vital Statistics System* (No. 20). Washington, DC: National Center for Health Statistics.

McCleary, R., & Chew, K.S.Y. (2002). "Winter is the Infanticide Season: Seasonal Risk for Child Homicide. *Homicide Studies, 6,* 228–239.

Mouzos, J., & Houliaras, T. (2006). *Homicide in Australia: 2004–05 National Homicide Monitoring Program (NHMP) Annual Report.* Canberra, Australia: Australian Institute of Criminology.

Downloaded from search.informit.org/doi/10.3316/informit.441003607964674. Charles Sturt University, on 02/22/2021 11:17 AM AEST; UTC+10:00. © Salus Journal, 2016.

Mouzos, J., & Rushforth, C. (2003). "Family Homicide in Australia." *Trends and Issues in Crime and Criminal Justice*. Canberra, Australia: Australian Institute of Criminology.

Nielssen, O.B., Large, M.M., Westmore, B.D., & Lackersteen, S.M. (2009). "Child Homicide in New South Wales from 1991 to 2005." *Medical Journal of Australia, 190,* 7–11.

Paulson, J.A., & Rushforth, N.B. (1986). "Violent Death in Children in a Metropolitan County: Changing Patterns of Homicide, 1958 to 1982. *Pediatrics, 78,* 1,013–1,020.

Puljula, J., Savola, O., Tuomivaara, V., Pribula, J., & Hillborn, M. (2007). "Weekday Distribution of Head Traumas in Patients Admitted to the Emergency Department of a City Hospital: Effects of Age, Gender and Drinking Pattern*." Alcohol and Alcoholism, 42*, 474–479.

Riedel, M., & Welsh, W.N. (2015). *Criminal Violence: Patterns, Explanations, and Interventions* (4th ed.). New York, NY: Oxford University Press.

Schmidt, P., Graβ, H., & Madea, B. (1996). "Child Homicide in Cologne (1985–94). *Forensic Science International, 76,* 131–144.

Shinsugi, C., Stickley, A., Konishi, S., Ng, C.F.S., & Watanabe, C. (2015). "Seasonality of Child and Adolescent Injury Mortality in Japan, 2000–2010. *Environmental Health and Preventive Medicine, 20,* 36–43.

Strang, H. (1996). "Children as Victims of Homicide. *Trends and Issues in Crime and Criminal Justice.* Canberra, Australia: Australian Institute of Criminology.

Tiihonen, J., Rasanen, P., & Hakko, H. (1997). "Seasonal Variation in the Occurrence of Homicide in Finland. *American Journal of Psychiatry, 154,* 1,711–1,714.

Uitenbroek, D.G. (1996). "Seasonal Variation in Alcohol Use. *Journal of Studies on Alcohol, 57,* 47–52.

Yarwood, D.J. (2004). *Child Homicide: Review of Statistics and Studies.* Ascot, UK: Dewar Research.

- o O o -