

Deaths in corrective services custody: a scoping review of the Australian and international literature

Prepared by: Truong M, Cuschieri D, Bugeja L.
Monash Nursing and Midwifery, Monash University
c/o Room D301, 35 Rainforest Walk
Wellington Road, Clayton, Victoria 3800

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Executive Summary

The *Aboriginal Death in Corrective Services New South Wales Custody Thematic Review* was established in May 2021 to examine the evidence on factors present among persons who die in corrective services custody. To support this evidence review a scoping review was performed to identify and summarise the key findings and themes reported in the Australian and international published literature. A systematic approach was applied to identify, review and synthesize the relevant literature to examine the following Terms of Reference (TOR):

- TOR 2: Statistical analysis of demographic and/or risk factors
- TOR 3: Good practice and protective elements for high risk prisoners
- TOR 7: Technology / built environment prevention strategies

Methods

A systematic scoping review method was used to identify relevant references from electronic databases from the disciplines of: law, criminology, psychology and medicine. Relevant references were also provided by the Correctional Services (CS) New South Wales (NSW) librarian for review. All references were screened against the eligibility criteria based on the terms of reference for inclusion in this scoping review.

Relevant data from each included reference was extracted into a Microsoft Excel spreadsheet. A narrative synthesis of quantitative and qualitative data was conducted and tabulated together and reported according to the terms of reference, study setting, cause and manner of death and Indigenous and non-Indigenous status. This synthesis was limited to references that studied a single cause of death.

Results

Overall summary

A total of 230 references met the eligibility criteria for this scoping review. The majority of references were relevant to TOR2 and there was a lack of research pertaining to TOR3 and TOR7. The majority of references provided information pertaining to risk factors and less focussed on protective factors. According to cause and manner of death: 137 references examined deaths in custody from suicide only, three examined deaths in custody from unintentional causes only, 16 examined deaths in custody from natural causes only and five examined deaths in custody from 'other' causes only (e.g., homicide).

Overall, the references reported deaths in custody that occurred between 1939 to 2020. One hundred and sixty-four references were primary studies or statistical reports, of which 155 were quantitative, eight were qualitative and one was mixed methods. The remaining 66 references consisted of literature reviews, discussion papers, non-statistical reports and commentaries. In terms of setting, the references most frequently examined populations in the United States (n=79, 34.3%), followed by Australia (n=39, 17.0%), the United Kingdom (n=37, 16.1%) and Canada (n=8, 3.5%).

TOR 2: Demographic characteristics and risk factors

Suicide only

There were 137 references that examined deaths in custody from suicide. Of these, one reference included Indigenous deaths only, 57 references examined non-Indigenous deaths only (or did not specify whether Indigenous people were included or not) and 11 references included both Indigenous

and non-Indigenous deaths. Fifty-seven references did not report the race/ethnicity of the people who died in custody by suicide.

Most studies reported demographic characteristics such as age, sex and racial/ethnic background. Across all 61 studies that reported age of the person who died in custody, the youngest was 14 years and the eldest was 79. The vast majority of people who died in custody by suicide were male. Five references reported the racial/ethnic background of Indigenous and non-Indigenous populations who died in custody by suicide; of the two Australian references, 12.1% (n=26) were from an Indigenous background. Of the 16 studies that reported nationality or country of birth among deaths in custody, the majority were natives (i.e. not born overseas). Of the 17 studies that reported marital status, there was a higher proportion of individuals who were single compared with those that were married/de facto or separated/divorced. Some studies reported information related to individual risk factors, most frequently mental/psychiatric health conditions, index offense and history of suicidal behaviours. Across the studies reporting mental/psychiatric health conditions (prior or current), the proportion of individuals who died in custody by suicide with mental health problems ranged from 5% to 86.7%. Of the studies reporting the individual's index offense, a high proportion were charged or convicted of violent offences (including murder or manslaughter), ranging from 32.9% to 75%. Across the studies reporting history of suicidal behaviours, about a quarter of individuals had previous histories of self-harm/self-injury or suicidal ideation.

Unintentional causes only

Three references examined deaths in custody from unintentional causes (e.g. drug overdose) and they were located internationally in the United States and Spain. There were no references reporting Indigenous deaths in custody due to unintentional causes. The majority of individuals were male and the mean age ranged from 34.3 years to 45.2 years. Of the two references that reported racial/ethnic background, the proportion of white/Caucasian individuals in custody that died from unintentional causes ranged from 53.7% to 89%.

Natural causes only

There were 16 international references that examined deaths in custody from natural causes (e.g. cancer, chronic illness, cardiovascular disease, COVID-19). There were no references specifically reporting Indigenous deaths in custody due to natural causes. Across the eight references reporting age, the youngest was 25 and the oldest was 90. The vast majority of people who died in custody by natural causes were male. Of the three references located in the United States that reported racial/ethnic backgrounds as frequencies, there were higher proportions of caucasians who died from natural causes compared with other racial/ethnic groups.

Other causes only

There were five studies that focused on deaths attributed to 'other' causes only (i.e. homicide or neglect). Of these, two references included both Indigenous and non-Indigenous deaths located in Australia, and three references included non-Indigenous deaths only located in the United States. The majority of individuals that died in custody were male.

TOR 3: Good practice and protective elements for high-risk prisoners

Suicide only

Four references discussed good practice and protective elements for prisoners that die in custody from suicide, of which three were Australian and one was New Zealand. There was no information pertaining to good practice and protective elements specifically for prisoners from Indigenous backgrounds. In general, the main topics discussed in relation to good practice and protective

elements to reduce the incidence of deaths in custody by suicide were in relation to: more suicide prevention programs and risk assessments/screenings for suicide, more staff training in suicide prevention and emergency response procedures, more support services for prisoners (including family visitation and access to mental health services) and greater collaboration between prison staff and other professionals to improve management of at-risk prisoners.

Unintentional causes only

There was no information related to good practice and protective elements for high-risk prisoners in this category.

Natural causes only

Six international references reported information with respect to good and protective elements for prisoners who die from natural causes in custody. The main topics discussed were in relation to: improving health services provided in prison, implementing smoking bans and greater implementation of infectious disease protocols (e.g., social distancing, use of personal protective equipment, testing inmates and staff) in relation to the COVID-19 pandemic.

Other causes only

Only one Australian reference reported information related to good practice and protective elements for prisoners who died in custody from 'other' causes, namely, *neglect*, in relation to a discussion of 2 deaths in custody. Good practice and protective elements were discussed in relation to improving medical assessments of prisoners and prompt provision of medication, in addition to providing education to officers regarding healthcare and administration of medication. There were also recommendations provided in relation to the transportation of people in custody as one death occurred when a man died from heat stroke while being transported in a vehicle.

TOR 7: Technology / built environment prevention strategies

Suicide only

Overall, 23 references discussed technology and built environment prevention strategies for prisoners that die in custody from suicide. There was no strategies specifically for prisoners from Indigenous backgrounds. Overall, the main topics discussed were in relation to: removing hanging points/fixtures in cells that enable hanging, reducing isolation or segregation of prisoners, reducing overcrowding of prisons, increase monitoring of at-risk prisoners (including installation of security cameras) and include a safe cell or observation cell in each correctional centre.

Unintentional causes only

The three references that examined individuals who died in custody from unintentional causes did not report information related to technology and built environment prevention strategies.

Natural causes only

One international reference mentioned technology and built environment prevention strategies for terminally ill prisoners, stating that it was important that the environment be adapted for 'comfort', although details were not provided.

Other causes only

Only one Australian reference reported information related to good practice and protective elements for prisoners who died in custody from 'other' causes, namely, *neglect*, in relation to the case of an Aboriginal man who died from heat stroke while being transported in a vehicle. It was recommended that the physical environment of vehicles transporting people in custody are safe; specifically, having

a functioning panic button/duress alarm in the rear area of the vehicle that is clear and accessible, installing a remote temperature monitoring system, reviewing the need to transport prisoners over long distances, and ensuring that policies and procedures to ensure the safety of persons to be transported by staff and private contractors are adhered to.

Discussion and Conclusion

This scoping review of deaths in custody found that the majority of references focussed on deaths from suicide, located in the United States. There is limited research comparing deaths in custody between Indigenous and non-Indigenous populations, however the majority of this existing research is located in Australia. The majority of references reported demographic characteristics such as age, gender and race/ethnicity with fewer references reporting individual risk and protective factors. Irrespective of cause and manner of death, a greater proportion of men than women have died in custody. In relation to deaths in custody by suicide, there were trends in relation to marital status (a higher proportion are single) and index offense (a higher proportion are charged or convicted of a violent offense).

There were relatively fewer references that provided information on good practice and protective elements for high risk prisoners and technology and built environment prevention strategies. Overall, protective and prevention strategies that were suggested by references were about increasing risk assessments for suicide and implementing suicide prevention programs, providing more health and social support services for prisoners and removing elements in cells that can be used as hanging points.

The findings of this scoping review should be interpreted with caution as the references reporting primary data were largely descriptive and used retrospective cross-sectional data which records the presence of a characteristic or factor among a particular population. This means that cause and effect, or the relationships between deaths in custody and socio-demographic characteristics or risk and protective factors, could not be determined. Furthermore, information pertaining to protective and preventative strategies were largely discussions or commentaries and not based on research evaluating the implementation and effectiveness of strategies or programs to reduce the incidences of deaths in custody (by any cause or manner of death).

Introduction

The *Aboriginal Death in Corrective Services New South Wales Custody Thematic Review* was established in May 2021 to examine the evidence on factors present among persons who die in custody. To support this evidence review a scoping review was performed to identify and summarise the key findings and themes reported in the international published literature. A systematic approach was used to search and review the relevant literature to examine the following Terms of Reference (TOR) in relation to deaths in custody:

- TOR 2: Statistical analysis of demographic and/or risk factors
- TOR 3: Good practice and protective elements for high risk prisoners
- TOR 7: Technology / built environment prevention strategies

Methods

Relevant published articles were identified in two stages:

Stage 1. Pilot

Correctional Services (CS) New South Wales (NSW) Librarian provided a list of articles which were reviewed for the purposes of:

- identifying key terms from articles on the topic to inform the development of a search strategy (see Appendix A);
- piloting an approach to data extraction from articles (see Appendix B); and
- identifying additional relevant articles from a bibliographic review of the articles provided by the CS NSW Librarian.

A review of the articles from the CS NSW librarian and the bibliographic review of these articles yielded 73 results. The following eligibility criteria was established to determine articles that should be included in the pilot review:

Setting = correctional service AND

TOR 2 - Statistical analysis of demographic and risk factors OR

TOR 3 - Good practice and protective elements for high risk prisoners OR

TOR 7 - Technology / built environment prevention strategies

Among the 73 articles included in the pilot, 42 reported deaths that occurred in the correctional services setting.

Stage 2. Search

Based on a review of the articles included in the pilot, indexed and key terms were identified to develop a search strategy that was applied to electronic databases of articles from the disciplines of: law, criminology, psychology and medicine. The search strategy (see Appendix A) was adapted to: Medline, EMBASE, PsycINFO, Scopus, Web of Science, INFORMIT, Westlaw AU, HEIN Online, WESTLAW UK, WESTLAW US + International and LexisNexis.

The searches for Medline, EMBASE, PsycINFO, Scopus, Web of Science yielded 5,595 articles, of which 2,105 were duplicates. The title and abstract of the 3,490 unique articles were screened against the eligibility criteria. The full texts of 453 articles were further assessed for relevance, of which 221 articles were included for data extraction.

The searches for INFORMIT, Westlaw AU, HEIN Online, WESTLAW UK, WESTLAW US + International and LexisNexis yielded 12,517 references in total. The title and abstract (where available) of these references were screened against the eligibility criteria. The full texts of 119 articles were screened, of which 60 were included for data extraction.

A total of 230 references met the eligibility criteria for this scoping review. A breakdown of these articles by relevance to: Terms of Reference; risk or protective factors; cause and manner of death; and Aboriginal or Non-Aboriginal death in custody is summarised in the Tables 1 and 2.

Table 1: Number of articles relevant to each TOR

Terms of Reference	Number of Articles		
	Australia	International	Total
Terms of Reference 2 Statistical analysis of demographic and risk factors	30	134	164
Terms of Reference 3 Good practice and protective elements for high risk prisoners	13	58	71
Terms of Reference 7 Technology / built environment prevention strategies	7	27	34

Table 2: Number of articles relevant to each cause, risk or protective factor and Indigenous status

Cause and Manner of Death ^a	Risk Factor Examined				Protective Factor Examined				Total Articles ^b
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous		
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.	
Suicide	25	5	25	74	2	2	4	13	150
Unintentional injury	16	2	15	17	-	-	-	1	51
Natural Causes	19	2	19	28	-	-	1	6	75
Other, specified	17	2	17	19	1	-	2	1	59

Single Cause and Manner of Death	Risk Factor Examined				Protective Factor Examined				Total Articles ^b
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous		
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.	
Suicide	6	3	6	56	2	1	3	11	88
Unintentional injury	-	-	-	3	-	-	-	-	3
Natural Causes	-	-	-	10	-	-	-	3	13
Other, specified	2	-	2	3	1	-	1	-	9

^a Some articles included more than one cause of death

^b Some articles included both Indigenous and non-Indigenous populations.

Data collection and analysis

Data from each reference was extracted into a Microsoft Excel spreadsheet and included the following items: author(s), publication type, year of publication, title of reference, country of deaths in custody, methodology, cause of death, population = Indigenous (Y or N), population = non-Indigenous (Y or N), number of deaths in custody, study period, correctional setting, individual risk factors, agent risk factors, physical risk factors, socio-political risk factors, individual protective factors, agent protective factors, physical protective factors and socio-political protective factors.

A narrative synthesis of quantitative and qualitative data was conducted and tabulated together and reported according to the terms of reference, cause of death and Indigenous and non-Indigenous status. **This synthesis was limited to references that studied a single cause of death.**

Results

Overview

Overall, 230 references were included in this scoping review. In terms of setting, the references most frequently examined populations in the United States (n=79, 34.3%), followed by Australia (n=39, 17.0%), the United Kingdom (n=37, 16.1%) and Canada (n=8, 3.5%). One hundred and sixty-four references were primary studies or statistical reports, of which 155 were quantitative, eight were qualitative and one was mixed methods. The remaining 66 references consisted of literature reviews, discussion papers, non-statistical reports and commentaries. Overall, the references reported deaths in custody that occurred between 1939 to 2020. One hundred and thirty-seven references reported on deaths due to suicide only, three reported on unintentional deaths only, 16 reported on deaths due to natural causes only and four reported on deaths from homicide. Sixty-six references reported on more than one cause of death and seven references did not report the cause and manner of death.

The following results focus on the 160 references that reported on a single cause of death only.

TOR 2: Demographic characteristics and risk factors

1.1. Suicide Only

There were 137 references that examined deaths in custody from suicide. Of these, one reference included Indigenous deaths only, 57 references examined non-Indigenous deaths only (or did not specify whether Indigenous people were included or not) and 11 references included both Indigenous and non-Indigenous deaths. Fifty-seven references did not report the race/ethnicity of the people who died in custody by suicide. Eleven references discussed deaths in custody from suicide but did not report number of cases therefore they are excluded from this section.

The references examined a range of demographic characteristics and risk factors related to deaths in custody by suicide. A summary is provided in Table 3 and 4 below.

Table 3: Number of references reporting demographic characteristics for deaths in custody from suicide

Demographic characteristics	Indigenous Only (n=1)		Indigenous and non-Indigenous (both reported) (n=11)		Non-Indigenous Only (including Indigenous not reported) (n=57)		Race / ethnicity not reported (n=57)	
	Aus. (n=1)	Int. (n=0)	Aus. (n=7)	Int. (n=4)	Aus. (n=0)	Int. (n=57)	Aus. (n=0)	Int. (n=57)
Age	1	-	6	3	-	36	-	15
Gender	-	-	5	1	-	34	-	20
Race/ethnicity	-	-	2	3	-	24	-	-
Marital status	-	-	-	2	-	15	-	4
Religion	-	-	-	-	-	1	-	-
Employment history	-	-	-	-	-	4	-	-
Education level	-	-	-	-	-	4	-	-
Nationality/country of birth/citizenship status	-	-	2	-	-	14	-	-
Housing/residential status	-	-	-	-	-	2	-	2
Other e.g. disability, childhood factors, have children	-	-	-	-	-	3	-	2

Table 4: Number of references reporting risk factors for deaths in custody from suicide

Risk factors	Indigenous Only / Disaggregated (n=1)		Indigenous and non-Indigenous (both reported) (n=11)		Non-Indigenous Only (including Indigenous not reported) (n=57)		Race / ethnicity not reported (n=57)	
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.
History of alcohol or drug use	-	-	1	2	-	9	-	9
History of physical health conditions (e.g. chronic disease)	-	-	-	-	-	4	-	-
Mental/psychiatric health conditions (prior and present)	-	-	1	1	-	16	-	14
Previous or current psychiatric hospital treatment	-	-	-	1	-	12	-	4

Risk factors	Indigenous Only / Disaggregated (n=1)		Indigenous and non-Indigenous (both reported) (n=11)		Non-Indigenous Only (including Indigenous not reported) (n=57)		Race / ethnicity not reported (n=57)	
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.
History of suicidal behaviours	-	-	1	-	-	16	-	11
Suicide risk	-	-	-	-	-	7	-	1
Previous criminal history	-	-	-	1	-	6	-	2
Previous incarceration	-	-	1	1	-	8	-	3
Offense (current)	-	-	2	2	-	26	-	9
Sentencing status	-	-	5	1	-	16	-	5
Length of sentence	-	-	-	1	-	12	-	6
Time served in jail prior to death	-	-	4	4	-	11	-	6
Time remaining in sentence	-	-	-	-	-	-	-	-
Other e.g. emotions and feelings, history of violence, parental deprivation	-	-	-	1	-	8	-	9

The following section provides details on the demographics characteristics and risk factors examined by references according to the Indigenous status of individuals who died in custody by suicide.

1.1.1. Indigenous deaths in custody only

There was one reference that reported on Indigenous deaths in custody from suicide only. This study examined 31 cases of Indigenous deaths in custody in Australia. The demographic and risk factors reported were age and only in relation to method of suicide by hanging. Of the 31 deaths, six (19.4%) died by hanging and the age groups were: under 20 (n=2, 6.5%), 20-24 years (n=1, 3.2%), 30-35 years (n=1, 3.2%), unknown (n=2, 6.5%) (Biles 1992).

1.1.2. Indigenous and non-Indigenous deaths in custody

Eleven references reported on both Indigenous and non-Indigenous deaths in custody; seven were Australian and four were international. Of the seven Australian references, six reported demographic characteristics and five reported risk factors of individuals who died in custody from suicide. Of the four international references, three reported demographic characteristics and three references reported risk factors of individuals who died in custody from suicide.

Age: For references with Indigenous and non-Indigenous deaths in custody that reported age (n=9), one reference reported mean age and standard deviation (not disaggregated by Indigenous status),

one reported median, three reported age groups, one reported mean age, median age and age range and three reported age descriptively. Table 5 shows Indigenous and non-Indigenous deaths in custody information pertaining to age of individuals.

Table 5: Studies reporting age information on Indigenous and non-Indigenous deaths in custody from suicide

Age Format	No. of references	Findings	
		Aus. (n=6)	Int. (n=3)
Mean (Standard Deviation)	1	Mean = 48 years (SD 20.69) (Willis et al 2016)	-
Mean Range Median	1	-	Mean = 29.3 years Range = 17-54 Median = 27 years (Jordan 1987)
Median	1	Median male age of 31.7 Median female age of 28.5 (Department of Justice and Regulations – Justice Health 2015)	-
Age groups	3	n=20 (21.7%), 18-24 years n=37 (40.2%), 25-34 years n=20 (21.7%), 35-44 years n=15 (16.3%), 45 and over (O'Driscoll et al. 2007) Non-Indigenous prisoners: n=44 (21.9%), 30-34 years n=34 (16.9%), 25-29 years n=30 (14.9%), 35-39 years Indigenous prisoners: n=11 (28.2%), 20-24 years n=9 (21.3%), 35-39 years n=7 (18%), 30-34 years (Willis et al. 2016)	Maori prisoners: n=5 (20%), 15-24 years n=7 (28%), 25-49 years Non-Maori prisoners: n=6 (24%), 15-24 years n=7 (28%), 25-49 years (Skegg & Cox 1993)
Other format	3	Younger age: Suicide Median male age of 31.7 Median female age of 28.5 Other causes Median of 43.5 years (Department of Justice and Regulation – Justice Health 2015) 15/36 (41.7%) Males aged 17–24 years (Eyland et al. 1997)	n=30 (45%) aged 30-39 years (Laishes 1997)

Gender: Five Australian references reported gender. Across the four studies that reported frequencies of by gender, 445 (91.9%) were male, 38 (7.9%) were female and one (0.2%) transgender (Department of Justice and Regulations – Justice Health 2015, O'Driscoll et al. 2007, Willis et al. 2016,). One Australian study reported that among 36 deaths, 15 were male and aged 17-24 years (Eyland et al. 1997). In comparison, one international study reported gender; among 66 individuals that had died in custody by suicide, 65 (98.5%) were male and one (1.5%) was female (Laishes 1997).

Race/ethnicity: Two Australian references reported the race or ethnicity of individuals that had died from suicide in custody. Across the two studies, 26 (12.1%) were from an Indigenous background and 188 (87.9%) were from a non-Indigenous background (O'Driscoll et al. 2007, Willis et al. 2016). In comparison, three international references reported race or ethnicity. One US study reported that among 16 individuals that had died in custody from suicide, 12 (75%) were white, one (6.3%) was Mexican-American and three (18.8%) were American-Indian (Jordan et al. 1987). One Canadian study reported 89% (n=59) of individuals were Caucasian (Laishes 1997) and one New Zealand study reported 18 (48.6%) individuals were from a Maori background and 19 (51.3%) were from a non-Maori background (Skegg & Cox 1993).

Marital status: Two international references reported marital status; one reported that 43 of 66 (65.1%) deaths were of individuals who were single (Laishes 1997) and the other reported that of 16 deaths, eight (50%) individuals were single, three (18.8%) were married and five (31.2%) were separated (Jordan et al. 1987).

Nationality/country of birth: overseas born: Two Australian references reported whether individuals that had died from suicide while in custody were born overseas. One report stated that 11 of 76 (19%) of individuals were born overseas (Department of Justice and Regulations – Justice Health 2015). Another reference reported that 19 of 92 (21%) individuals were overseas-born and 61 (66%) were born in Australia (O'Driscoll et al. 2007).

History of alcohol or drug abuse: Three references reported whether individuals that had died from suicide had a history of alcohol or drug abuse. One Australian reference reported that 45 of 92 deaths (48.9%) had a history of substance abuse (O'Driscoll et al. 2007). One US reference reported the blood ethanol level of individuals at the time of their death, finding that 10 of 16 (62.5%) had traceable levels of blood ethanol (Jordan & Schmeckpeper 1987). One Canadian reference found a history of alcohol or drug abuse among 59% (n=39) of deaths (Laishes 1997).

Mental health or psychiatric conditions (history and existing): Two references reported on individuals with a history of mental illness or a psychiatric history; one Australian study reported that 15 of 92 (16.3%) had a major mental illness (O'Driscoll et al. 2007) and a Canadian study reported that 29 of 66 (44%) had an antisocial personality disorder or personality problems (Laishes 1997).

Previous or current psychiatric treatment: Only one international reference reported previous or current psychiatric treatment; 18 of 66 (27%) individuals who died by suicide were seeing a psychiatrist/psychologist at the time of their death (Laishes 1997).

History of suicidal behaviours (threats, attempts, non-suicidal self-injury, ideation): One Australian reference reported that 63 of 92 (68%) individuals who died by suicide had a history of self-harm (O'Driscoll et al. 2007).

Previous criminal history: One Canadian reference reported on the previous criminal history of individuals who died by suicide; of 66 individuals, 49 (74%) had more than ten years involvement in the criminal justice system and 37 (56%) had a history of extreme violence (Laishes 1997).

Previous incarceration: One Australian and one international reference reported on whether individuals who had died from suicide had previously been incarcerated. One Australian report stated that of 134 deaths, 92 (68.7%) had prior time in custody (CSNSW). A Canadian study by Laishes (1997) reported that for 35 of 66 (53%) individuals it was their first federal term of incarceration at the time of their death.

Type of offence: Two Australian references reported on the type of offence for which the individual had been incarcerated for at the time of their death; two reports mentioned that individuals who died

from suicide in custody were more likely to be imprisoned for violent offences, i.e. murder, assault (Department of Justice and Regulations - Justice Health VIC 2015). In comparison, two international references reported type of offense. A US study of 16 individuals found that ten were charged with alcohol related offences, one was charged with theft/arson/assault and it was unknown for three (Jordan & Schmeckpeper 1987). A Canadian study of 66 individuals reported that 24 (36%) were incarcerated for robbery and 22 (33%) for murder (Laishes 1997).

Sentencing status: Five Australian references and one New Zealand reference mentioned sentencing status of individuals who had died from suicide. One Australian reference reported that of 134 deaths, the number that were sentenced at the time of death was 60 (44.8%), unsentenced was 71 (53%), and a forensic patient was three (2.2%) (CSNSW). A study by O'Driscoll (2007) reported that 48 (52%) of individuals were on remand and two references reported that un-sentenced prisoners accounted for 41.9% of all suicides (Department of Justice and Regulations - Justice Health 2015). A report by Willis et al. (2016) also stated that unsentenced prisoners were more likely to take their own lives. Finally, a New Zealand study by Skegg & Cox (1993) reported that of 18 individuals of Maori background, five were on remand and 13 sentenced and of 19 non-Maori individuals four were on remand and 15 were sentenced.

Length of sentence: Only one Canadian reference reported length of sentence of individuals who had died from suicide, stating that 26 of 66 (39%) individuals were serving two to five years (Laishes 1997).

Time served in prison prior to death: Four Australian references reported the amount of time served by individuals who died of suicide in custody. Among two of these references, 184 of 374 (49.2%) individuals died from suicide within the first three months of being imprisoned (Willis et al. 2016, CSNSW). Another reference reported that around one third of 76 had been in prison for less than 30 days and around two thirds for less than five months prior to their death (Department of Justice and Regulation – Justice Health 2015). A study by O'Driscoll (2007) reported that for 92 deaths, 32% of suicides occurred within one week of reception into custody and 74% died within six months of incarceration.

1.1.3 Non-Indigenous deaths in custody only (or did not specify whether Indigenous people were included or not)

All fifty-seven references reporting non-Indigenous deaths in custody only, or did not specify whether Indigenous people were included, were international. Forty-nine references in this section reported demographics and 44 references reported risk factors of individuals who died in custody from suicide.

Age: Thirty-seven references reported age. Of these, five reported mean only, two reported mean and standard deviation, three reported mean and age range, one reported mean and age groups, two reported mean, standard deviation and age range, one reported mean, standard deviation and age group and one reported mean and standard error of the mean, age range, age groups and median age. Two references reported age range only, two reported median age and range, and nine references reported age groups only. Eight references reported age descriptively. Table 6 shows non-Indigenous deaths in custody only (or did not specify whether Indigenous people were included or not) information pertaining to age of individuals.

Across all 37 studies where age of the person who died from suicide in custody was reported, the youngest was 14.5 years (Fruehwald et al. 2004) and the eldest was 79 years (Dooley, 1990). The mean age of persons who died from suicide in custody across the 15 studies reporting this measure ranged from 27.9 years (MacKenzie et al. 2003) to 41.3 years (Opitz-Welke et al. 2016). The median age of persons who died from suicide in custody across the three studies reporting this measure ranged from 28 years (Marcus & Alcabes 1993) to 33 years (Humber et al. 2013).

Table 6: Non-Indigenous only (or did not specify whether Indigenous people were included or not) deaths in custody from suicide by age

Age Format	No. of references	Findings	
		Aus. (n=0)	Int. (n=37)
Mean only	5	-	35.7 years (Fruehwald et al. 2003) 27.9 years (MacKenzie et al. 2003) 41.3 years (Opitz-Welke et al. 2016) 36 years 2013-14; 38 years 2012-13 (Prisons & Probation Ombudsman 2015) 30.8 years (Daniel & Fleming 2006)
Mean (SD)	2	-	38.22 (12.73) (Boren et al. 2018) 36.2 (11.9) (prison) and 38.9 (13.1) (forensic hospital) (Voulgaris et al. 2018)
Mean (SEM) Median Range Age Groups	1	-	Mean (SEM) = 30 (± 9.9) Median = 28 Range = 17-60 Age Groups n=6 (12.5%), 17-20 n=12 (25%), 20-25 n=7 (14.6%), 25-30 n=10 (20.8%), 30-35 n=6 (12.5%), 35-40 n=7 (14.6%), 40-60 (Marcus & Alcabes 1993)
Mean (SD) Range	2	-	Mean (SD) = 39.10 (12.05) Range = 16-73 (Buchman-Schmitt et al. 2017) Mean (SD) = 32.9 (10.7) Range = 15-79 (Dooley 1990)
Mean (SD) Age groups	1	-	Mean (SD) = 29.3 (6.0) Age groups: n=9 (24.3%), 15-24 n=23 (62.2%), 25-34 n=4 (10.8%), 35-44 n=1 (2.7%), 45-54 (Salive et al. 1990)
Mean Range	3	-	Mean = 29.9 Range = 18-55 (Anno 1985) Mean = 34.35 Range = 14.5-72.23 (Fruehwald et al. 2004) 1996: Mean = 34.8, Range = 23-55 1997: Mean = 33, Range = 21-57 (Tatarelli et al. 1999)
Mean Age groups	1	-	Mean = 32.8 Age groups:

Age Format	No. of references	Findings	
		Aus. (n=0)	Int. (n=37)
			n=5 (6.6%), 15-19 n=7 (9.2%), 20-24 n=16 (21.1%), 25-29 n=20 (26.3%), 30-34 n=12 (15.8%), 35-39 n=9 (11.8%), 40-44 n=5 (6.6%), 45-49 n=2 (2.6%), 50+ (Way et al.2005)
Age groups	9	-	n=6, 15-19 n=56, 20-39 n=57, 30-39 n=29, 40-49 n=29, >50 Only for Denmark, Iceland and Norway (n=167) (Morthorst et al.2020) Age at incarceration n=136 (38.5%), 18-29 n= 217 (61.5%), 30+ (Duthe et al.2013) 43%, 20-29 29%, 30-39 28%, 40+ (Blaauw et al. 2005) n=24, 15-17 n=12, 18-20 n=144, 21-24 n=198, 25-29 n=252, 30-39 n=100, 40-49 n=32, 50-59 n=7, 60+ (Borrill 2002) n=21 (1.1%), 10-17 n=324 (17.1%), 18-24 n=842 (44.4%), 25-39 n=660 (34.8%), 40-59 n=48 (2.5%), 60+ (Dixon et al.2020) n=1 (1%), < 18 n=42 (27%), 18-30 n=73 (47%), 31-40 n=24 (16%), 41-50 n=14 (9%), >50 (Patterson & Hughes 2008) n=33 (16%), 18-20 n=69 (33.5%), 21-29 n=54 (26.2%), 30-39 n=37 (18%), 40-49 n=13 6.3%), 50+ (Rivlin et al. 2012) n=5 (21.7%), < 20 n=4 (17.4%), 21-25 n=8 (34.8%), 26-30 n=2 (8.7%), 31-35

Age Format	No. of references	Findings	
		Aus. (n=0)	Int. (n=37)
			<p>n=3 (13%), 36-40 n=1 (4.3%), 41-45 (Copeland 1989) n=10 (37%), 20-34 n=12 (44.4%), 35-49 n=4 (14.8%), 50-64 n=1 (3.7%), >64 (De Luca et al. 2015)</p>
Median Range	2	-	<p>Median = 31 Range = 15-75 years (Humber et al. 2011) Median = 33 Range = 15-67 years (Humber et al. 2013)</p>
Age range	2	-	<p>18-53 years (Daniel & Fleming 2006) 17-54 years (DuRand et al.1995)</p>
Other format	9	-	<p>Male prisoners aged 50-59 are significantly more likely to take their own lives than those aged 18-24 (Ministry of Justice 2015). One hundred seventy-seven men and 11 women (17.6%) were 50 years of age or older (Optiz-Welke et al. 2019). For the incarcerated population, risk factors are similar with the exception to the community, with the rates of suicide being in the 21-40 age range, because of fewer numbers of inmates aged 41 and older (Patterson & Hughes 2008). Prisons with suicide were disproportionately composed of male inmates, inmates under the age of eighteen (Dye 2010). The Standard Mortality Rate (SMR) for suicide at all ages was 20.7 (95% CI 16.7–25.7) (Fazel & Benning 2009). Risk factors for suicide after self-harm in male prisoners were older age (Hawton et al. 2014). Prisoners with foreign citizenship showed significantly lower suicide rate compared to German prisoners. This difference reached significance within age groups (Radeloff et al. 2015). Deaths are most likely to occur among those aged 21-29 and 30-39 (Snow et al. 2002). The number of self-inflicted deaths in the 30 to 39 age group increased by</p>

Age Format	No. of references	Findings	
		Aus. (n=0)	Int. (n=37)
			63% between 2015 and 2016 (Ministry of Justice 2018).

Gender: For references that reported gender (n=33), 30 studies reported frequencies of male and female deaths by suicide and three studies reported gender descriptively. Of the 30 studies that reported frequencies by gender, 10,012 (92.2%) were males and 848 (7.8%) were females (Anno 1985, DuRand et al. 1995, Blaauw et al. 2005, Boren et al. 2018, Buchman-Schmitt et al. 2017, Copeland 1989, Daniel & Fleming 2006, De Luca d'Alessandro et al. 2015, Dixon et al. 2020, Dooley 1990, Fazel et al. 2009, Fruehwald et al. 2002, Fruehwald et al. 2003, Fruehwald et al. 2004, Green et al. 1993, Hawton et al. 2014, Humber et al. 2011, Kerkhof & Bernasco 1990, Ministry of Justice 2015, Morthorst et al. 2020, Opitz-Welke et al. 2019, Patterson & Hughes 2008, Prisons and Probation Ombudsman 2015, Rivlin et al. 2012, Sakelliadis et al. 2013, Tatarelli et al. 1999, van Ginneken et al. 2017, Voulgaris et al. 2018, Way et al. 2005). One study reported that prisons with suicide were disproportionately composed of male inmates (Dye 2010), another reported that the rate among men ranging from 106 to 140 per 100,000 and among women has risen from 101 per 100,000 in 1995 to 160 per 100,000 in 2001 (Snow et al. 2002), and one study reported that the rate of self-inflicted deaths per 1,000 people in custody was higher for females (3.11) than for males (1.35) (Ministry of Justice 2018).

Race/ethnicity: Across the 12 references reporting race/ethnicity as frequencies, 1,947 (67%) individuals were white/Caucasian, 497 (17.1%) were African American, 307 (10.6%) were Latinx/Hispanic, ten (0.3%) were Asian and 145 (5%) were 'other' (Anno 1985, Boren et al. 2018, Copeland 1989, Daniel & Fleming 2006, Dixon et al. 2020, Dooley 1990, Mackenzie et al. 2003, Marcus et al. 1993, Patterson & Hughes 2008, Prisons and Probation Ombudsman 2015, Salive et al. 1990, Way et al. 2005). In addition, one individual was Afro-Caribbean and 30 were categorised as 'Asian or other' (Dooley 1990). Eight reported that 1,911 (83.9%) individuals were white and 367 (16.1%) were not white (Blaauw et al 2005, Borrill 2002, Buchman-Schmitt et al 2017, DuRand 1995, Green et al. 1993, Humber et al. 2011, Ministry of Justice 2018, Snow 2002). Three studies provided information pertaining to race/ethnicity descriptively, such as "inmates are white, black, Indian or of Spanish extraction" (Anonymous, 1974).

Nationality/country of birth: Fourteen references reported factors related to nationality and country of birth. Three of these references reported cases in Germany, of which 1,158 (73%) individuals who had died from suicide were German and 428 (27%) were non-German (Opitz-Welke et al. 2016, 2019; Voulgaris et al. 2018). Another study based in Germany reported that suicide rates are generally higher in inmates with German citizenship opposed to foreign citizenship (Radeloff et al. 2015). One study from France reported that 284 (80.5%) cases of suicide were of French individuals and 69 (19.5%) were other nationalities (Duthe et al. 2013). Two studies were conducted in the Netherlands: one reported that 55% of cases (n=24) were Dutch (Kerkhof & Bernasco 1990) and 61 of 95 (64.2%) individuals were born in the Netherlands (Blaauw et al. 2005). One study reporting 70 cases in Greece, described cases as being from: Eastern European (n=13, 18.6%), Asia (n=9, 12.9%), Africa (n=1, 1.4%), Western Europe (n=4, 5.7%) and Greek (n=43, 61.4%) (Sakelliadis et al. 2013). A study from Italy reported that Italians comprised 68.75% (n=19) of cases and foreign born comprised 31.25% (n=8) of cases. A report by the Ministry of Justice (2018) described that of 122 cases in England and Wales, European Economic Area (EEA) nationals made up 8% of cases and other foreign nationals were 8%. A report by the Prisons and

Probation Ombudsman (2015) in England and Wales reported that 12 of 136 (8.8%) cases were foreign nationals. One reference reported that 34 inmates (91%) were US born and English-speaking and three (8.1%) were foreign born native Spanish speakers (Daniel & Fleming, 2006). Studies based in Austria reported that 226 (90%) were Austrian citizens and 25 (10%) were foreigners (Fruehwald et al. 2002, 2003).

Marital status: Of the 15 references that reported marital status, ten reported frequencies of individuals that were married/de facto, single, divorced/separated/widowed and other. Across these ten studies, 621 (22.2%) individuals were married/de facto, 1,509 (54.0%) were single, 605 (21.6%) were divorced/separated/widowed and 60 (2.1%) were categorised as 'other' (Anno 1995, Blaauw et al. 2005, Boren et al. 2018, Daniel & Fleming 2006, Dixon et al. 2020, Dooley 1990, DuRand et al. 1995, Green et al. 1993, Sakelliadis et al. 2013, Prisons and Probation Ombudsman 2015). Of the remaining five references, one reported that 525 of 766 (68.5%) individuals were 'single/divorced/separated/widowed' (Humber 2011), one reported that 53 of 220 (24.1%) were married (Humber et al. 2013), one reported that individuals overall had marital histories that are poor (Anonymous 1974), another reported that 24.1% were married and 24.5% were divorced or widowed (Fruehwald et al. 2003) and 49% were married (Kerkhof et al. 1990).

Employment: The four references reported employment status in various ways. One reference reported that 121 of 220 (55.0%) individuals were unemployed or receiving sick payments (Humber et al. 2013). One study reported that 25 of 95 (23.6%) were employed (Blaauw 2005). A study of 44 cases reported that 57% were employed (Kerkhof et al. 1990). And, finally, one study reported that 51 (72.9%) had 'blue collar' jobs, 8 (11.4%) had 'white collar' jobs and 11 (15.7%) were unemployed (Sakelliadis et al. 2013).

Education: The four references reported educational background in various ways. One study reported that 9 (24.3%) had high school diplomas (Daniel et al. 2006). Green (1993) reported that of 133 individuals, only 18% had an education level above Grade 10. Another reference reported that of 70 individuals: eight were illiterate, 19 had < 6 yrs, 19 had <9 years, 14 had <12 years, four had <14 years, and two had >14 years of education (Sakelliadis et al. 2013). And, finally, one reference stated that inmates were inadequately educated (Anonymous 1974).

Residence/housing: Two references mentioned housing and residential information of individuals who died by suicide. One reference reported that of 75 cases: 31% were living alone, 45% were living together, and 24% had no fixed abode (Blaauw et al. 2005). One reference reported that of 295 cases, 77 (26.1%) had no fixed abode or lived alone, 182 (61.7%) lived in some contact with others and for 36 (12.2%) it was unknown (Dooley 1990).

Religion: One reference reported religious background (Anno 1985): of 38 cases, 17 (44.7%) were Catholic, 15 Baptist (39.5%), four other Protestant (10.5%), one Agnostic (2.6%) and one unknown (2.6%).

Other demographic characteristics: Three references reported whether individuals had children and one reported the presence of a disability. Of the three references that reported a history of having children, 183 (43%) individuals had children and 243 (57%) did not have children (Fruehwald et al. 2003, Sakelliadis et al. 2013, Prisons and Probations Ombudsman 2015). A report by the Prisons and Probations Ombudsman (2015) mentioned that nine (6.6%) of 136 cases had a disability.

History of alcohol or drug abuse: Nine references reported whether individuals that had died from suicide in custody had a history of alcohol or drug abuse. Across three references, 296 of 447 (66.2%) individuals were reported as having a history of substance (ab)use (Daniel & Fleming, 2006, Folk et al. 2018, Fruehwald et al. 2003). One study reported that 91.1% (n=34) inmates had a history of

drug/alcohol abuse (Daniel & Fleming, 2006). One reference reported that of 95 individuals, 30 (31.6%) had a history alcohol abuse, 58 (61.6%) a history hard drug abuse, 43 (45.3%) a history of soft drug abuse (Blaauw et al 2005). Additionally, 25 (26.3%) had a single type of substance abuse and 44 (46.3%) had multiple types of substance abuse. Another reference reported that 85 (28.8%) individuals had a history of alcohol abuse and 69 (23.4%) had a history of drug abuse (Dooley 1990). One reference reported that of 1,067 individuals, 65 (6.1%) were experiencing drug withdrawal prior to suicide and 38 (3.6%) were experiencing alcohol withdrawal prior to their suicide (Opitz-Welke et al. 2016). One reference reported that 18 of 70 (25.7%) of individuals had a history of drug abuse (Sakelliadis et al. 2013). One reference found four (17.4%) cases with blood alcohol content at the time of the suicide and six (25%) had a positive drug screen (Copeland 1989).

History of physical health conditions: Four references reported on individuals' physical health conditions. One reference reported that 90 of 766 (11.7%) of individuals have previously been an in-patient in prison (Humber et al. 2011). One reference reported that 35.1% (n=13) of individuals who had died by suicide had a medical condition. Another reported that 27 (14.2%) had a decline in their physical health prior to their suicide. One reference reporting HIV status of individuals who had died by suicide stated that in 1996 there were 14 (31.3%) individuals who were HIV positive and eight (14.5%) in 1997 (Tatarelli et al. 1999).

Mental health or psychiatric conditions (history and existing): Sixteen references reported on previous or existing mental health or psychiatric conditions of individuals who died from suicide. Across 11 references that reported frequencies of whether a mental/psychiatric disorder was present; 1,076 of 3,092 (34.8%) individuals had a mental/psychiatric disorder or illness (Anno 1985, Copeland 1998, Daniel & Fleming 2006, Favril et al. 2019, Fruehwald et al 2002, Fruehwald et al. 2003, Humber et al. 2011, Humber et al. 2013, Opitz-Wilke et al. 2019, Sakelliadis et al. 2003, , Tatarelli et al. 1999, Voulgaris et al. 2018). The proportion ranged from 5.6% (Fruehwald et al. 2002) to 86.7% (Favril et al. 2019). One reference reported that of 76 individuals, 9.2% had bi-polar or major depression, 38.2% had schizophrenia, 27.6% had adjustment disorder, 2.6% had impulse disorder and 39.5% had personality disorder (Way et al. 2005). Another reference reported that of 37 individuals, 32.4% had a mood disorder, 27% had schizophrenia, 8.1% had anxiety, 5.4% had adjustment disorder, 2.7% had paraphilia and 2.7% had impulse-control disorder (Daniel & Fleming, 2006). One reference reported that of 190 individuals, 18.4% had a psychotic disorder, 46.3% had mood disorder, 12.6% had anxiety disorder, 18.4% had substance use disorder, 14.7% had antisocial personality disorder and 6.8% had borderline personality disorder (Folk et al. 2018).

Previous or current psychiatric treatment: Twelve references reported on previous or current psychiatric treatment of individuals who died in custody by suicide. Across six references that reported frequencies of individuals that had previous psychiatric care/contract/treatment, 683 of 1,537 (44.4%) individuals had previous psychiatric treatment (Blaauw et al. 2005, Daniel & Fleming, 2006, Dooley 1990, Folk et al. 2018, Humber et al. 2011, Patterson et al. 2008). Additionally, one reference described that 59% of individuals had no prior inpatient psychiatric hospitalizations (Kovasznyay et al. 2004). Four references reported information related to in-patient psychiatric care; 110 (14.4%) individuals in one study had received National Health Service psychiatric in-patient admission (Humber et al. 2011), 80 (27.1%) individuals in one study had previous inpatient admission (Dooley 1990), 42 (55%) had a history of inpatient psychiatric treatment (Way et al. 2005) and five (38.5%) in another study had spent time in some form of care (Mackenzie et al. 2003). One reference stated that prisons with suicide were disproportionately composed of a greater percentage of inmates receiving mental health services (Dye 2010).

History of suicidal behaviours (threats, attempts, non-suicidal self-injury, ideation): Sixteen references reported information related to histories of suicidal behaviours. Across 11 references that reported frequencies of prior suicide attempts among individuals; 1,293 of 4,895 (26.4%) individuals had a history of prior suicide attempts (Anno 1985, Blaauw et al. 2005, Daniel & Fleming, 2006, Dixon et al. 2020, Favril et al. 2019, Folk et al. 2018, Fruehwald et al. 2003, Green et al. 1993, Optiz-Welke et al. 2016, Optiz-Welke et al. 2019, Voulgaris et al. 2018). Four references reported frequencies of individuals with a history of self-harm/self-injury or suicidal thoughts/threats; 739 of 3,331 (22.2%) individuals had a history of suicidal behaviour other than suicide attempts (Dixon 2020, Dooley 1990, Fruehwald et al. 2003, Humber et al. 2011, Patterson & Hughes 2008). One reference reported that among 63 individuals, 12 (19.6%) individuals had one previous suicide attempt and 33 had more than one attempt (Buchman-Schmitt et al. 2017). Additionally, mentioned that prior suicide attempts are significantly correlated with suicide in mentally ill inmates (Daniel & Fleming 2006).

Suicide risk: Seven references reported information related to suicide risk. Across two references, 132 of 253 (52.2%) individuals were reported as being at risk of self-harm or suicide prior to their death in custody by suicide (Humber et al. 2013, Mackenzie et al. 2003). One reference reported that of 190 individuals that died by suicide in custody, 31 (16.3%) were on suicide precautions and 52 (27.4%) were under close observation (Boren et al. 2018). One reference reported that of 190 inmates that died by suicide, a suicide plan was identified for four people and history of self-injurious behavior for 37 people (Folk et al. 2018). One reference reported that 49 of 100 (49%) individuals that died from suicide had a risk assessment for suicide conducted prior to their death and ten were deemed 'high risk' (Tatarelli et al. 1999). One reference reported that 90 (11.7%) of individuals had contact with prison healthcare services less than 24 hours prior to their death (Humber et al. 2011) and another reported that 155 (52.5%) had been examined by a doctor a week before their death (Dooley 1990).

Previous criminal history: Six references reported on the previous criminal history or convictions of individuals who died from suicide. Of two references that reported previous convictions, 312 of 423 (73.8%) individuals who died from suicide had previous criminal convictions (Fruehwald et al. 2003, 2004). One reference reported that 23 of 37 (62.2%) inmates had prior records (Daniel & Fleming 2006). One reference reported that 266 of 1,067 individuals who died in custody from suicide has committed crimes at a young age (Optiz-Welke et al. 2016). One reference reported previous arrests, with 26 of 38 individuals having one or more prior arrests (Anno 1985). Another reference also reported past arrest history among 23 individuals: robbery (n=11, 47.8%), burglary (n=5, 21.7%), drug possession (n=3, 13%), murder (n=1, 4.3%), vagrancy (n=1, 4.3%), defrauding cab driver (n=1, 4.3%), unknown (n=1, 4.3%) (Copeland 1989).

Previous incarceration: Eight references reported whether individuals who died in custody from suicide had previously been incarcerated. Four references reported frequencies of the number of individuals who died in custody during their first time in prison; 182 of 706 (25.8%) individuals across these references had not been in prison before (Fruehwald et al. 2003, Green et al. 1993, Humber et al. 2013, Prisons and Probation Ombudsman 2015). Three references reported frequencies of the number of individuals who died in custody and had a previous history of incarceration; 269 of 684 (39.3%) individuals among these studies had been incarcerated previously (Blaauw et al. 2005, Sakellidis et al. 2013, Voulgaris et al. 2018). One reference reported that 21 (56.8%) individuals had received new charged or convictions prior to their suicide (Daniel & Fleming 2006).

Type of offence: Twenty-six references reported the type of offence for which the individual had been incarcerated for at the time of their death (Table 7).

Table 7: Non-Indigenous only (or did not specify whether Indigenous people were included or not) deaths in custody from suicide by type of offense

Categories of offense	No. of references	International Findings
Violent and/or non-violent	5	<p>252 (32.9%) charged with or convicted of a violent offense (Humber et al 2011)</p> <p>50 (53.8%) charged with or convicted for violence and 15 (16.1%) for alcohol or drugs (Blaauw et al. 2005)</p> <p>114 (60%) convicted of violent crime and 75 (39.5%) convicted of non-violent crime (Boren et al. 2018)</p> <p>25 (67.6%) charged or convicted of a violence offense (Daniel & Fleming, 2006)</p> <p>276 (53.2%) committed a violent crime (Voulgaris et al. 2018)</p>
Sub-categories of violent and non-violent offenses	12	<p>22 (57.9%) charged with violent crimes:</p> <ul style="list-style-type: none"> - murder, manslaughter attempted murder (n=9, 40.9%) - aggravated assault (n=5, 22.7%) - robbery (n=6, 27.3%) - sexual assault (n=1, 4.5%) - indecency with a child (n=1, 4.5%) <p>16 (32.1%) charged with non-violent offenses:</p> <ul style="list-style-type: none"> - burglary/theft (n=12, 75.0%) - arson (n=2, 12.5%) - driving while impaired (n=1, 6.3%) - possession of drugs (n=1, 6.3%) (Anno 1985) <p>109 (12.9%) charged with or convicted of murder</p> <p>30 (3.6%) with attempted murder</p> <p>9 (1.1%) with manslaughter</p> <p>59 (7.0%) with rape</p> <p>2 (0.2%) with buggery</p> <p>27 (3.2%) with arson</p> <p>1 (0.1%) with terrorism (Borril 2002)</p> <p>51 (38%) most recent offense was violence (non-sexual)</p> <p>34 (26%) robbery or weapons</p> <p>25 (19%) property offenses (Green et al. 1993)</p> <p>10 (30%) charged with or convicted of theft and handling</p> <p>6 (18%) violence against the person</p> <p>6 (18%) other criminal offences</p> <p>4 (12%) robbery</p> <p>4 (12%) drug offences</p> <p>2 (6%) burglary</p> <p>1 (3%) fraud & forgery (Mackenzie et al. 2003)</p> <p>28 (58.3%) charged with violent crime</p> <p>14 (29.2%) serious property offence</p> <p>1 (2%) alcohol related</p> <p>3 (6.3%) minor charge (Marcus et al. 1993)</p> <p>70 (34.0%) charged with or convicted of violent offense</p> <p>18 (8.7%) sexual offence</p> <p>21 (9.7%) robbery</p> <p>10 (4.9%) with burglary</p> <p>30 (14.6%) other theft</p>

Categories of offense	No. of references	International Findings
		<p>20 (9.7%) drug offence and 37 (18%) other (Rivlin et al. 212)</p> <p>11 (29.7%) convicted or murder or manslaughter 6 (16.2%) rape or sex offense 6 (16.2%) assault or kidnapping 9 (24.3%) robbery, burglary or arson 4 (10.8%) other (Salive et al. 1989)</p> <p>130 (28%) charged with or convicted of violence against the person 47 (10%) sexual offences 63 (14%) burglary 44 (10%) robbery 75 (16%) theft/handling stolen goods 6 (1%) fraud and forgery 26 (6%) drugs 66 (14%) other 1 (0.2%) unknown (Snow et al. 2002)</p> <p>In 1996:</p> <ul style="list-style-type: none"> - 26.7% of crimes committed were murder - 24.4% burglary - 20% drug related - 15.6% armed robbery - 13.3% other <p>In 1997:</p> <ul style="list-style-type: none"> - 19.6% of crimes committed were murder - 29.4% burglary - 29.4% drug related - 11.8% armed robbery - 8.8% other (Tatarelli et al. 1999) <p>5 (21.7%) committed the offence of armed robbery 4 (17.4%) carrying concealed weapon 4 (17.4%) probation violation 3 (13%) battery on police officer 2 (8.7%) burglary 2 (8.7%) disorderly conduct 2 (8.7%) speeding/assault 1 (4.3%) threatening to kill president (Copeland 1989)</p> <p>22.22% were in jail for murder 44.44% robbery/theft 22.22% peddling drugs 11.11% subversive association/mafia (De Luca et al. 2015)</p> <p>In 2012-13:</p> <ul style="list-style-type: none"> - >75% convicted or charged with violent and sexual offenses - 13% convicted or charged robbery, criminal damage or other <p>In 2013-14:</p> <ul style="list-style-type: none"> - 56% convicted or charged with violent or sexual offenses - 33% convicted or charged robbery, criminal damage or other (Prisons and Probation Ombudsman 2015)

Categories of offense	No. of references	International Findings
Sub-categories of violent offenses only	4	<p>74 (74.7%) charged with or convicted of a violent offense 37 (38.1%) charged with or convicted of murder / manslaughter / attempted murder (Humber et al 2013)</p> <p>54 (70.6%) committed violent crimes:</p> <ul style="list-style-type: none"> - attempted murder (n=1) - murder (n=13) - manslaughter (n=6) - rape/sodomy (n=9) - assault (n=10) - robbery (n=8) - kidnap (n=3) - arson (n=1) - possession of weapon (n=2) (Way et al. 2005) <p>18 (40%) charged with murder/manslaughter (Kerkhof et al. 1990)</p> <p>14 (39%) charged with murder/intent to murder/manslaughter (DuRand et al. 1995)</p>
Other format	5	<p>146 (26.4%) of crimes committed involved close relatives and 74 (6.9%) of crimes were sexual offenses (Opitz-Welke et al. 2019)</p> <p>The offence type with the highest rate of self-inflicted deaths among 18-24 year olds was sexual offences. (Ministry of Justice 2015)</p> <p>Suicide rate was highest for prisoners convicted of homicide (50.5, 95% CI: 40.5–63.0) (Duthe et al. 2013)</p> <p>These men have been admitted to jail for crimes of aggression, ranging from armed robbery, breaking and entering to murder and rape (Anonymous 1974)</p> <p>50% of index offenses were misdemeanours (Sakelliadis et al. 2013)</p>

Sentencing status: Sixteen references reported sentencing status. Seven references reported the proportion of individuals who died in custody by suicide that were on remand, pretrial or unsentenced; of these, 1,276 of 2,746 (46.5%) were on remand (Humber et al 2011, Humber et al 2013, Mackenzie et al. 2003, Ministry of Justice 2018, Opitz-Welke et al. 2019, Prisons and Probation Ombudsman 2015, Voulgaris 2018,). Three references reported the number of individuals who were either on remand/pre-trial or sentenced; of these, 264 of 661 were on remand and 355 of 661 were sentenced/post-trial (Boren et al. 2018, Fruehwald et al. 2002, 2003). One reference reported the incarceration status of 48 individuals who died in custody by suicide; 28 (58.3%) were detained, six (12.5%) convicted, seven (14.6%) sentenced and seven (14.6%) unknown (Marcus et al. 1993). One reference reported the sentencing status of 220 individuals; 103 (46.8%) were on pretrial, 100 (45.5%) sentenced and 17 (7.7%) mentally disordered (Fruehwald et al. 2004). Another reference reported that of 45 individuals who died in custody by suicide in 1996, 57.8% were convicted and sentenced and of 55 that died in 1997, 61.8% were convicted and sentenced (Tatarelli et al 1999). One reference reported the legal status/position of 27 individuals; 44.4% were justiciable, 37.04% final judgement, 11.11% appellant and 7.4% recurrent (De Luca et al.2015).

Length of sentence: Eleven references mentioned the length of sentence of individuals who died from suicide while in custody. One study reported that 40 (3.7%) individuals who died from suicide while in

custody had a lifelong sentence (Opitz-Welke et al. 2016). One reference reported that 39 individuals had been sentenced to between two months and life imprisonment (Skegg et al. 1991). One reference reported that 60% of 44 individuals had a sentence greater than one year (Kerkhof et al. 1990) and another reported that the most frequent sentence was 'life' (26%) (Buchman-Schmitt et al. 2017). One reference stated that prisoners sentenced to over ten years had the highest rate of self-inflicted deaths of any sentence band (Ministry of Justice 2015). One reference reported that out of 122 individuals who died in custody, 11% had short sentences (<6 months) and 41% had long-term sentences (4+ years) (Ministry of Justice 2018). The remaining five references reported the sentence lengths of individuals that had died in custody by lengths of time:

- Of a total of 38 individuals, sentencing lengths reported were: 5 years or less (n=12, 31.6%), 6-10 years (n=8, 21.1%), 11-25 years (n=6, 15.8%), 25 years or more (n=12, 31.6%) (Anno 1985)
- Of a total of 119 individuals, sentencing lengths reported were: 6 months or less (n=15, 12.6%), 6-12 months (n=7, 5.9%), 12-24 months (n=33, 27.7%), 4+ years (n=64, 53.8%) (Rivlin et al. 2012)
- Of a total of 36 individuals, sentencing lengths reported were: 0-18months (n=4, 11.1%), 19-96 months (n=4, 11.1%), 97-180 months (n=9, 25%), >180 months (n=10, 27.8%), life (n=9, 25%) (Salive et al. 1989)
- Of a total of 458 individuals, sentencing lengths reported were: <3 months=5%, 3-12 months=33%, 12-18 months=8%, 18mth - 3years=8%, 3-5 years=10%, 5-10 years=15%, >10years=3%, life=18% (Snow et al. 2002)
- Of a total of 136 individuals, 52 who died in 2012-13 and 84 who died in 2013-14, sentencing lengths reported were: <6 months: 0% in 2012-13, 15% in 2013-14; 6-12 months: 2% in 2012-13=2%, 2% in 2013-14; 1-2 years: 6% in 2102-13, 5% in 2013-14; 2-4 years: both 6%; 4+ years: 12% in 2012-13, 17% in 2013-14; life and indeterminate: 25% in 2012-13, 20% in 2013-14 (Prisons and Probation Ombudsman 2015).

Time served in prison prior to death: Eleven references reported the amount of time served by individuals who died from suicide in custody. One reference reported that of 37 deaths, 11 occurred after being in prison for more than three months (Daniel & Fleming 2006). One reference reported that the median length of time between prisoners' initial reception and their suicides was 171.5 days (corresponding to 5.6 months) (Favril et al. 2019). Another reference reported that of 766 deaths, 198 occurred ≤ 7 days of reception into prison and 357 occurred ≤ 28 days of reception into prison (Humber et al. 2011). One reported stated that the majority of self-inflicted deaths occurred relatively soon after a prisoner's entry into the current prison (<6 months) (Ministry of Justice 2015). One study found that among 133 deaths, a high proportion of suicides occurred relatively shortly after sentencing; specifically 25% within 90 days, while 51.5% killed themselves within a year of sentence (Green et al. 1993). Another report stated that of 122 deaths, 10% occurred in the first week and 21% occurred in the first month (Ministry of Justice 2018). The remaining five references reported time served in prison prior to death by time periods:

- Of 38 individuals that died, the various time periods served in prison was: 1 month (n=5, 13.2%), 1-3 months (n=6, 15.8%), 4-6 months (n=2, 5.3%), 6-12 months (n=6, 25.8%), 1-2 years (n=10, 26.3%), 3-5 years (n=5, 13.2%), >5 years (n=4, 10.5%) (Anno 1985).
- Of 295 individuals that died, the time period from reception was: within 1 week of reception (n=51, 17.3%), within a month (n=84, 28.5%), within 3 months (n=151, 51.2%), within a year (n=227, 76.9%), over a year (n=68, 23.1%) (Dooley 1990).

- Of 37 individuals that died, the various time periods served in prison was: 0-1 month (n=4, 10.8%), 2-18 months (n=10, 27%), 19-36 months (n=9, 24.3%), 37-96 months (n=8, 21.6%), 97-180 months (n=4, 10.8%)on, >180 months (n=1, 2.7%) (Salive et al. 1989).
- Of 458 individuals that died, the time period from reception was: <1 day (n=11, 2.4%), 1-2 days (n=29, 6.3%), 3 days to < 1 week (n=29, 6.3%), 1 week to <1 month (n=55, 12%), 1 month to <3 months (n=49, 10.7%), 3 months to <6 months (n=35, 7.6%), 6 months to <12 months (n=19, 4.1%), 1 year or more (n=22, 4.8%) (Snow et al. 2002).
- Of 45 individuals that died in 1996, 24.4% served <1 month and 20% served >3 years and of the 55 deaths in 1997, 23.5% served <1 month and 25% served >3 years (Tatarelli et al. 1999).

Other risk factors: Six references reported other risk factors not described above. One reference reported that 28 (40%) of individuals were receiving pharmaceutical treatment at the time of their death (Sakelliadis et al. 2013). Another reference reported that 81 (36.8%) individuals were receiving psychotropic medication on entry into custody (Humber et al. 2013). One reference reported that 239 of 766 individuals who died from suicide in custody had a history of violence (Humber et al. 2011). One reference reported that some individuals had experienced a variety of stressors; of 90 in total, 26 (28,9%) had conflict with inmates, 34 (37.8%) had recent bad news, 52 (57.8%) had sudden stressor(s), 70 (77.8%) had previous trauma and 16 (17.8%) had a family history suicide (Folk et al. 2018). Another reference reported that of 37 individuals, 43.2% had expressed feelings of guilt and 35% had experienced conflict (Daniel & Fleming 2006). One reference recorded the number of stressful life events in the files of 134 suicide decedents and found that a history of multiple suicide attempts was associated with greater stress before death (Buchman-Schmitt et al. 2017).

1.1.4 Deaths where Indigenous status or race/ethnicity was not reported

Of the fifty-seven references reporting deaths in custody where Indigenous status or race/ethnicity was not stated, 56 references were international and one included cases from Australia, Belgium, Canada, Denmark, England and Wales, Finland, Ireland, Netherlands, New Zealand, Norway, Scotland, and Sweden (Fazel et al. 2011). Thirty-seven references in this section reported demographic characteristics and 28 reported risk factors of individuals who died in custody by suicide.

Age: There were fourteen references that reported age in various ways: two studies reported mean only, one reference reported mean age and standard deviation, one reported mean age, standard deviation and range, one reported mean age and range, one reported mean age and age groups, five reported age groups only, one reported age range only and two reported age descriptively. (Table 8 Deaths where Indigenous status or race/ethnicity was not reported - information pertaining to age of individuals).

Table 8: Deaths where Indigenous status or race/ethnicity was not reported - information pertaining to age of individuals

Age	No. of references	Findings	
		Aus.	Int.
Mean only	2	-	41 years (Tartaro & Ruddell 2006) 35.2 years (Thoonen & Duijst 2014)
Mean (SD)	1	-	27.8 years (6.0) (Thomas et al. 1992)
Mean (SD) Range	1	-	Mean (SD) = 33.72 years (9.18) Range 21-64 (Dahle et al. 2005)
Mean Range	1	-	Mean = 28.6 years Range = 14-59 (Backett 1987)
Mean Age groups	1	-	Mean = 29.5 years Age groups: n=15, 15-17 years n=43, 18-20 years n=66, 21-24 years n=95, 25-29 years n=93, 30-39 years n=39, 40-49 years n=15, 50-59 years n=3, 60+ years (Towl & Crighton 1998)
Age range	2	-	23-45 years (Bartoli et al 2018) 18-24 years (The Harris Report 2015)
Age groups	4	-	n=40 (37%), 15-24 n=40 (37%), 25-34 n=15 (13.9%), 35-44 n=13 (11.1%), 45+ (Bird 2008) n=1 (3.4%), 18-20 n=3 (10.3%), 21-24 n=3 (10.3%), 25-29 n=3 (10.3%), 30-34 n=8 (27.6%), 35-39 n=4 (13.8%), 40-44 n=5 (17.2%), 45-49 n=2 (6.9%), 50-59 n=0, >60 (Castel Pietra et al 2018) n=3 (11.1%), 20-29 years n=11 (40.7%), 30-39 years n=6 (20.7%), 40-49 years n=7 (25.9%), 50+ years (Gervais et al 2021) n=105 (20%), 18-25 years (males only) n=419 (80%), 25+ years (males only) (Radeloff et al 2019)

Age	No. of references	Findings	
		Aus. (n=0)	Int. (n=14)
Other format	2	-	Inmates in their teens, early twenties and over 50 years died from suicide proportionately more than inmates in other age groups. (Burtch 1979) Higher risk if young. (Scott 2015)

Gender: For references that reported gender (n=18), 13 reported frequencies and five reported gender descriptively. Of the 13 studies reporting frequency, there were 3,452 (95%) males and 182 (5%) females (Backett 1987, Bartoli et al 2018, Cascio 2006, Castelpietra et al 2018, Fazel et al 2011, Fruehwald et al 2000a, Fruehwald et al 2000b, Independent Advisory Panel 2017, Radeloff et al 2019, The Harris Report 2015, Thoonen & Duijst et al 2014, Thomas et al 1992, Towl & Crighton 1998,). Two studies reported gender in terms of ‘rate ratios’ (i.e. rates compared with those in the general population of the same sex and similar age) found that rate ratios were higher for female prisoners compared with male prisoners (Fazel et al. 2017, Fritz et al. 2021). One discussion paper described that male inmates had the highest rates of suicide within jails (Hatcher 2009). Another paper reported that women are at a high risk of suicide (Konrad et al. 2007) and that in the Maryland state prison system, the typical suicide was ‘male’ (Lester 1994). A discussion paper by Scott (2015) reported that prisoners were at higher risk of suicide if they were male.

Marital status: Five references reported marital status. Across two studies reporting the marital status of 60 individuals, ten (16.7%) were married/in a relationship, 44 (73.3%) were single and six (10%) were divorced/separated/widowed (Beckett 1987, Gervais 2021). One study reported that over 70% of individuals were single (Burtch 1979) and another study described that 79% of individuals were single or separated (Topp 1979). A study by Lester (1995) found that divorce, marriage, and birth rates accounted for 36% of the variance in the prison suicide rate and 96% of the variance in the male Canadian suicide rate.

Residence/housing: Two references reported residential status. One reference reported that 43% (n=13) of individuals who died from suicide in custody had no fixed residence (Dahle et al. 2005). Another study reported that 53.8% (n=100) of individuals who died lived in lodgings alone or were ‘vagrants’ (Topp 1979).

Other demographic characteristics: Other demographic factors (n=2) mentioned by references were Minnesota Multiphasic Personality Inventory (MMPI) scores (Daigle 2004) and socioeconomic status (Rodgers 1995).

History of alcohol or drug abuse: Five references reported frequencies of individuals with a history of alcohol or drug abuse; among three of these references 182 of 502 (36.3%) individuals had a drug abuse problem (Blaauw et al. 2001, Dahle et al. 2005, Crighton & Towl 1998), one reference reported that 15 of 33 (45.5%) individuals had an alcohol or drug problem (Backett 1987), and one reference reported that of 186 individuals, 55 (29.6%) had an alcohol problem and 21 (11.3%) had a drug problem (Topp 1979). Two references stated that substance abuse was a risk factor for suicide (Independent Advisory Panel 2017, Cliquennois 2010).

Mental health or psychiatric conditions (history and existing): Of five references that reported frequencies of individuals with a history of mental illness or a psychiatric history, 249 of 746 (33.3%) individuals had a history of mental illness (Dahle et al. 2005, Fruehwald et al. 2000a, Gervais 2021, Crighton & Towl 1998, Thoonen & Duijst 2014). One study reported that in a study of 186 deaths from suicide, 70 (37.6%) had a past treatment for psychiatric illness, 19 (10.2%) had a history of depressive episodes and 79 (42.5%) had some tendency for depression (Topp 1979). Five references stated that mental illness was a risk factor for suicide but did not report the magnitude of this (Cliquennois 2010, Independent Advisory Panel 2017, Konrad 2007, Scott 2015, Tartaro & Ruddell 2006,). A study by Burtch (1979) mentioned that nine of the 20 (45%) non-European Union prisoners (out of a total 96 cases of suicide) were reported as having serious mental health problems. A reference by Cox et al. (1993) reported that eight of 13 (61.5%) suicides during 1983-87 had a serious psychiatric condition.

Previous or current psychiatric treatment: Of the four references that reported the number of individuals that had previous psychiatric treatment or at the time of their suicide, 93 of 182 (51.1%) individuals had received psychiatric treatment (Backett 1987, Dahle 2005, Gervais 2021, Thoonen & Duijst 2014).

History of suicidal behaviours (threats, attempts, non-suicidal self-injury, ideation): Of the four references that reported the number of individuals that had a history of suicidal behaviours, 98 of 164 (59.8%) individuals had a history of suicidal behaviours (Backett 1987, Bartoli et al. 2018, Gervais et al. 2021, Hayes 2009, Thoonen & Duijst 2014). In a study of 30 individuals that died from suicide, it was reported that 53% had attempted suicide previously and 40% had a history of suicide ideation (Dahle et al. 2005). Three other references stated that prior histories of self-harm and suicide attempts were risk factors for deaths in custody by suicide (Konrad et al. 2007, Scott 2015, Cliquennois 2010). A study of 377 individuals who died from suicide reported that in relation to suicide monitoring, 49% had a prior psychiatric history (Crighton & Towl 1998). A study of 29 individuals reported that seven (24.1%) had previous suicide attempts and nine (31.0%) had previous (non-suicidal) self-injury (Castel Pietra et al. 2018).

Suicide risk: One reference reported that of 33 individuals that died in custody by suicide, 11 (33.3%) were under observation and four were identified as suicide risks (Backett 1987).

Previous criminal history: Two references reported on the previous criminal history or convictions of individuals who died by suicide. Among these two studies, 196 of 219 (89.5%) of individuals had prior criminal convictions (Backett 1987, Topp 1979).

Previous incarceration: Three references reported individuals who died from suicide had previously been incarcerated. Among these three studies, 44 of 90 (44.4%) of individuals had been incarcerated previously (Backett 1987, Dahle et al. 2005, Gervais et al. 2021).

Type of offence: Six references reported the type of offence for which the individual had been incarcerated for at the time of their death. One reference reported that of 27 individuals, the offences were: homicide (n=9, 33.3%), violence (n=6, 22.2%), sexual offences (n=7, 25.9%), other (n=5, 18.5%) (Gervais et al. 2021). Four of nine individuals in one study had been arrested for violent offences (Hayes 2009). In a study of 538 individuals, the offences reported were: murder and related (n=66, 12.3%), manslaughter and related (n=31, 5.8%), rape (n=32, 5.9%), sex abuse (n=21, 3.9%), sex assault (n=4, 0.7%), exhibitionism (n=2, 0.4%), pimping (n=2, 0.4%), drug offences (n=58, 10.8%), theft and related (n=97, 18%), fraud and related (n=34, 6.3%), robbery (n=32, 5.9%), rapacious extortion (n=28, 5.2%), robbery resulting in death (n=2, 0.4%), extortion (n=5, 0.9%), theft resembling robbery (n=3, 0.6%), traffic offences (n=12, 2.2%), other (n=15, 2.8%) (Radeloff et al. 2019). Another study of 186 individuals reported that 87 (46.8%) had committed theft and 53 (28.5%) had committed a violent

crime (Topp 1979). A study of 29 individuals reported the following offences: assault and battery (n=3, 10.3%), damage and fire (n=2, 6.9%), drug offences (n=8, 27.6%), homicide (n=7, 24.1%), theft and robbery (n=9, 31.0%) (Castelpietra et al. 2018). The Harris Report (2015) stated that roughly three-quarters of those convicted had been found guilty of violent offences, such as violence against the person. And lastly, Burtch (1979) mentions that among offenders, inmates of theft and assault were more prone to suicide compared with violent offenders and sexual offenders.

Sentencing status: Of five references that reported the sentencing status of individuals who had died from suicide while in custody, 330 of 706 (46.7%) were on remand and 376 of 706 (53.3%) were sentenced (Backett 1987, Gervais et al. 2021, Towl & Crighton 1998, Topp 1979, The Harris Report 2015).

Length of sentence: Six references mentioned the length of sentence of individuals who died from suicide while in custody. One reference reported that the longest sentence being served was four years (Backett 1987). One reference reported that inmates facing short sentences (2-3 years) died from suicide at disproportionately high rates (Burtch 1979). A study of 186 deaths reported that 66 (35.5%) were of individuals who had sentences 18 months or longer and 51 (27.4%) were of individuals who had sentences less than 18 months (Topp 1979). A study of 377 deaths by Towl & Crighton (1998) found that in the following number of deaths re. sentencing length: up to 6 months (n=11, 2.9%), 6-12 months (n=9, 2.4%), 12-18 months (n=11, 2.9%), 18-36 months (n=39, 10.4%), 36-48 months (n=16, 4.2%), 48-60 months (n=13, 3.4%), >60 months (n=40, 10.6%), life sentences (n=39, 10.3%). One reference listed 'sentenced to more than 20 years' as a risk factor for suicide (Cliquennois 2010). And finally, one reference reported that among 83 deaths, of those sentenced, approximately 80% had received a custodial sentence of more than 12 months imprisonment (The Harris Report 2015).

Time served in prison prior to death: Six references reported the amount of time served by individuals who died from suicide in custody. One reference reported that of 33 deaths, four (12.1%) occurred in the first 24 hours, 13 (39.4%) within the first week, and 20 (60.1%) within the first month (Backett 1987). One reference reported that of 220 deaths, 16 (7.3%) occurred the first day in custody, 20 (9.1%) between 2-10 days, eight (3.6%) in 11-30 days and 32 (14.5%) in 31-90 days (Fruehwald et al. 2000a). A discussion paper by Hatcher (2009) stated that 48% of jail suicides occur during the first week of incarceration. Among nine deaths, the length of incarceration ranged between two days to six years with a median of 32 days (Hayes 2009). Another study reported that deaths according to time in custody were: < 1 month (n=77, 41.4%), 1-2 months (n=23, 12.4%), 3rd month (n=12, 6.5%), 4th month (n=8, 4.3%), after 4 months (n=66, 35.5%) (Topp 1979). And, finally, The Harris Report (2015) found that among incarcerated individuals aged 18-24, 26% died within the first week, 46% died within the first month and 86% died within the first six months.

Other risk factors: Nine references reported other risk factors not described above. Five mentioned factors of emotion and feelings (e.g. loss, isolation, fear, grief) (Champion 2009, Hatcher 2009, Konrad et al. 2007, Scott 2015, Chui 2018, Cliquennois 2010). One reference mentioned that poor social and family support may be a risk factor (Konrad 2007) and another mentioned a history of parental deprivation and degree of aggression in lifestyle as risk factors (Topp 1979). One reference reported that 67 of 92 (72.8%) individuals who died of suicide were taking medication at the time of the suicide (Thoonene & Duijst 2014) and another reported that experiences of bullying in jail was a risk factor (Scott 2015). One study examined opioid-dependency among deaths by suicide (Bird 2008).

1.2. Unintentional Causes Only

There were three references that examined deaths in custody from unintentional causes (Hegde et al. 2020, Hvozdoovich et al. 2020, Miguel-Arias et al. 2017). All three references examined populations located internationally: the United States and Spain.

The demographic characteristics reported by the three studies were age, gender and ethnicity, with one reference also reporting marital status. Two references reported risk factors of individuals with respect to history of physical health conditions (Miguel-Arias et al. 2017) and substance abuse history (Hegde et al. 2020).

Age: Three references reported age of individuals. One reference, from the United States, reported that among 55 individuals that died in custody from opioid overdose the mean age was 34.3 years (SD 7.4) (Hegde et al. 2020). Another reference reported that among 54 individuals that died in custody from fatal overdose, the mean age was 45.2 and median age was 45.5 years (Hvozdoovich et al. 2020). One reference, from Spain, reported that among 37 individuals that died in custody from acute drug reactions, the mean age was 34.7 years (Miguel-Arias et al. 2017).

Gender: Three references reported gender of individuals. One reference reported that among 55 individuals, 16 (29%) were female and 39 (71%) were male (Hegde et al. 2020). In one reference, all decedents were male (Hvozdoovich et al. 2020) and in another reference, 89.2% (n=33) were male (Miguel-Arias et al. 2017).

Race/ethnicity: Two references reported race/ethnicity of individuals. One reference reported that of 55 individuals, 49 (89%) were Caucasian, five (9.1%) were African American and one (1.8%) was Hispanic (Hegde et al. 2020). One reference reported that of 54 individuals that died in custody from fatal overdose, 53.7% (n=29) were white and 46.3% (n=25) were black (Hvozdoovich et al. 2020).

Marital status: One reference reported marital status; of 37 individuals that died in custody from acute drug reactions, 47.6% (n=18) were married (Miguel-Arias et al. 2017).

History of physical health conditions: One reference reported that 9.5% (n=3) had a previous pathology, 56.8% (n=21) were HIV-positive and 47.6% (n=18) had recent injection signs (less than 1 week old) (Miguel-Arias et al. 2017).

History of substance abuse: One reference reported 'substance abuse risk assessment' scores of individuals who died from opioid overdose; with 11% scoring 'very low/low', 29% scoring 'med/mod', 22% scoring 'high' and 5% scoring 'very high' (Hegde et al. 2020).

1.3. Natural Causes Only

There were 16 international references that examined deaths in custody from natural causes. Eleven references reported on non-Indigenous deaths in custody only, or did not specify whether Indigenous people were included. Five references did not report race or ethnicity. There were no references reporting Indigenous deaths in custody due to natural causes. Deaths attributed to COVID-19 were considered natural causes. Of the 16 references, two reported deaths attributed to COVID-19 exclusively (Altibi et al. 2021, Prisons and Probation Ombudsman 2021). One reference also examined deaths caused by cancer only (Mathew et al. 2002). The other thirteen references examined multiple causes of deaths, including: HIV/AIDs; cardiovascular disease; chronic illness; respiratory diseases; pneumonia; influenza; and an array of other diseases including gastrointestinal disease, endocrine disease, nervous system disease, circulatory system disease.

The references examined a range of demographic characteristics and risk factors related to deaths in custody by suicide. A summary is provided in Table 9 and 10 below.

Table 9 Number of references reporting demographic characteristics

Demographic characteristics	Indigenous Only / Disaggregated (n=0)		Indigenous and non-Indigenous (both reported) (n=0)		Non-Indigenous Only (including Indigenous not reported) (n=11)		Race / ethnicity not reported (n=5)	
	Aus	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int
Age	-	-	-	-	-	8	-	2
Gender	-	-	-	-	-	6	-	1
Race/ethnicity	-	-	-	-	-	5	-	-

Table 10: Number of references reporting risk factors for deaths in custody due to natural causes

Risk Factors	Indigenous Only / Disaggregated (n=0)		Indigenous and non-Indigenous (both reported) (n=0)		Non-Indigenous Only (including Indigenous not reported) (n=11)		Race/ethnicity not reported (n=5)	
	Aus	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int
Medical History	-	-	-	-	-	4	-	1
History of drug or alcohol use	-	-	-	-	-	-	-	1
History of smoking						1		
Time between prison incarceration and hospice care	-	-	-	-	-	1	-	-
Body Mass Index	-	-	-	-	-	1	-	-

1.3.1. Non-indigenous deaths in custody only (or did not specify whether Indigenous people were included or not)

All eleven references reporting non-Indigenous deaths in custody only, or did not specify whether Indigenous people were included, were international. Ten references in this section reported demographics, and two reported additional risk factors of individuals who died in custody from natural causes.

Age: Eight references provided information related to age. Two reported mean and standard deviation. Of these two, one also reported age range and the other reported age group. One reported mean and age range, two reported age range and age group, and five reported age groups only. Table 11 below shows non-Indigenous death in custody only (or did not specify whether Indigenous people were included or not) information pertaining to age of individuals.

Table 11 - Non-Indigenous only (or did not specify whether Indigenous people were included or not) deaths in custody from suicide by age

Age Format	No. of references	Findings	
		Australia	International
Mean (SD) Age Range	1	-	Mean = 56 (\pm 9.72) Range = 29-75 (Cloyes et al. 2015)
Mean (SD) Age Group	1	-	Mean = 61.2 (\pm 12.5) Age Groups: N = 40 >65 years (Altibi et al. 2021)
Mean only Age range	1	-	Mean = 67 Age range = 40-90 (Prison and Probation Ombudsman)
Age Range	1	-	Age range = 25-84 (Harzke et al. 2011)
Age Range Age Group	1	-	Age range = 20-79 Age Groups: n=209 (19.9%), 20-39 (men only) n=544 (51.9%), 40-59 (men only) n=234 (22.3%), 60-79 (men only) n=17 (1.6%), <40 (women only) n=43 (4.1%), >40 (women only) (Elting et al 2002)
Age groups only	2	-	n=15,289 (95.4%), >35 years (Binswanger 2014) n=5 (4.6%), 18-39 n=32 (29.6%), 40-49 n=53 (49.1%), 50-59 n=18 (16.7%), 60+ (Baillargeon et al. 2009)
Other	1	-	Death rates from natural causes were much higher for Black and non-Hispanic under 45 years of age than for similarly aged Hispanics. (McCain et al. 1983)

Gender: For references that reported gender (n=6), all six studies reported frequencies of male and female deaths from natural causes. Across these studies, 21,232 (97%) were males and 651 (3%) were females (Altibi et al 2021, Baillargeon et al 2009, Binswanger et al 2014, Harzke et al 2011, Mathew et al 2002, McCain et al 1983). (Note: 3 studies only reported deaths of males: Baillargeon et al. 2009, McCain et al. 1983, Harzke 2011.)

Race/ethnicity: Of the five references that reported race/ethnicity, four reported race/ethnicity as a frequency, and one reported race/ethnicity descriptively. Across three references that reported race/ethnicity as a frequency, 903 (44.7%) were white/Caucasian, 805 (39.9%) were African American, 302 (15%) were Hispanic, and 8 (0.4%) were 'other' (Altibi et al. 2021, Baillargeon et al. 2009, Mathew et al. 2002,). In another reference, it was reported that of 26 individuals that died from COVID-19, 22 (84.6%) were White British, three (11.5%) Black/Asian/minority ethnic and one (3.8%) White Irish (Prisons and Probation Ombudsman 2021). One study stated that death rates from natural causes higher for African Americans and non-Hispanics (McCain et al. 1983).

Medical History: Four studies reported whether individuals who died of natural causes had other underlying medical conditions. Of 108 individuals who died of hepatocellular carcinoma, 84 (77.8%)

prisoners had a history of diabetes, 8 (7.4%) had HIV, and 72 (66.7%) had either or both of hepatitis B and hepatitis C (Baillargeon et al. 2009). One study assessed the cause of death for 655 prisoners, with 148 (23%) having cardiovascular disease, 143 (22%) had cancer, 136 (21%) had HIV infection, 48 (7%) had liver disease, and 20 (3%) had chronic respiratory disease (Spaulding et al. 2015). One reference reported that of 79 prisoners, 14% had diabetes, 10% had seizures or other neurological disorders, 41% had an infectious disease, 12% had lung disease, 11% had cancer and 28% had heart disease (Cloyes et al. 2015). Of the fourth study that reported mortality rates, of 108 prisoners, 14 (13.0%) had diabetes, three (2.8%) had HIV, 11 (0.9%) had cancer, 20 (18.5%) had heart disease, and prisoners also had underlying issues including hypertension (n=76, 70.4%), dyslipidaemia (n=54, 50%), myocardial infarction (n=15, 13.9%), congestive heart failure (n=16, 14.8%), peripheral vascular disease (n=9, 8.4%), cerebrovascular disease (n=10, 9.3%), liver disease (n=2, 1.9%), chronic kidney disease (n=11, 10.2%), dialysis (n=11, 0.9%), tumours (n=21, 19.4%), dementia (n=2, 1.9%) and hemiplegia (n=1, 0.9%) (Altibi et al. 2021).

Smoking History: One reference reported on individuals who had a history of smoking with frequencies; of 96 individuals that died in custody, three (3.1%) were active smokers and 74 (77.1%) were former smokers (Altibi et al. 2021).

Time between prison incarceration and hospice care: One reference reported the time between prison incarceration to hospice care; the average time reported was 14.6 years (Cloyes et al. 2015).

Body Mass Index: One study reported that of prisoners who died of COVID-19, they had a mean BMI of 29.5 (\pm 5.8) (Altibi et al. 2021). Further, this study reported that of 50 prisoners, 45 (90%) were obese, with a BMI above 30, and 5 (10%) were morbidly obese with a BMI above 40.

1.3.2 Deaths where Indigenous status or race/ethnicity was not reported

Four of the five references reporting deaths in custody due to natural causes, where Indigenous status or race/ethnicity was not stated, were international. One source made no explicit reference to a country (Levy et al. 1999). Three references reported demographic characteristics, and one reference reported risk factors of individuals who died in custody from natural causes.

Age: Two references reported age. One reported that of a total of 178 deaths, most occurred to those aged between 50-59 (Fazel & Benning 2006). One reference reported that the age range of individuals who died from natural causes was 29-67 years (Gherman et al. 2016).

Gender: Gender was reported in one study, whereby all nineteen prisoners who died of natural causes were male (Gherman et al. 2016).

Medical History: One reference mentioned the underlying medical history of prisoners who died from natural causes; 30-70% of prisoners who passed from tuberculosis as a natural cause were also infected with HIV (Levy 1999).

History of alcohol or drug abuse: One reference noted drug use as a risk factor for individuals that had died from natural causes (Levy 1999).

1.4. 'Other' Only

There were five studies that focused on deaths attributed to 'other' causes only. Of these, two references included both Indigenous and non-Indigenous deaths, and three references included non-Indigenous deaths only. Four studies reported the cause of death as homicide inside prison, and one reported neglect as the cause of death.

Table 12: Summary of number of references reporting demographic characteristics

Demographic characteristics	Indigenous Only / Disaggregated (n=0)		Indigenous and non-Indigenous (both reported) (n=2)		Non-Indigenous Only (including Indigenous not reported) (n=3)		Race/ethnicity not reported (n=0)	
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.
Age	-	-	1	-	-	3	-	-
Gender	-	-	1	-	-	1	-	-
Race/ethnicity	-	-	1	-	-	2	-	-
Nationality	-	-	-	-	-	1	-	-

Table 13 Summary of number of references reporting risk factors for deaths in custody due to other causes

Risk factors	Indigenous Only / Disaggregated (n=0)		Indigenous and non-Indigenous (both reported) (n=2)		Non-Indigenous Only (including Indigenous not reported) (n=4)		Race/ethnicity not reported (n=0)	
	Aus.	Int.	Aus.	Int.	Aus.	Int.	Aus.	Int.
Education History	-	-	-	-	-	2	-	-
IQ	-	-	-	-	-	1	-	-
Member of a gang	-	-	-	-	-	1	-	-
Committed violent offence/ extensive criminal record	-	-	1	-	-	1	-	-
Offence leading to imprisonment	-	-	1	-	-	-	-	-
Legal status (sentenced or on remand)	-	-	1	-	-	-	-	-
Length of sentence	-	-	1	-	-	2	-	-
Time served prior to death	-	-	1	-	-	1	-	-
Time remaining to be served until released.	-	-	1	-	-	-	-	-
Prior disciplinary violations	-	-	-	-	-	1	-	-

1.4.1. Indigenous and non-Indigenous deaths in custody

Two references reported on both Indigenous and non-Indigenous; both were Australian. Only one reference, which reported homicide as the cause of death, reported demographic and risk factors (Dalton 1999). The other reference reported deaths of 1 Indigenous and 1 non-Indigenous man and outlined protective factors; see Section 2.4 and 3.4 (Freckelton et al. 2009).

Age: The one reference that reported age recorded the mean age (33 years), the median age (31 years) and the age range (19-57) of prisoners who died by homicide in prison (Dalton 1999).

Gender: One Australian reference reported gender (Dalton 1999) study: 55 (98.2%) prisoners who died by homicide in prison were male, and one (1.8%) was female.

Race/ethnicity: One Australian reference reported the race or ethnicity of individuals that had died by other causes, namely homicide, in custody (Dalton 1999). Of 56 prisoners who died, four (7.1%) were from an Indigenous background, and 52 (92.9%) were from a non-Indigenous background.

Committed prior violent offence/extensive criminal record: One Australian reference recorded whether prisoners who died by other causes in custody had an extensive criminal record (Dalton 1999). Of 56 prisoners, 29 (51.8%) had an extensive criminal record.

Offence leading to imprisonment: One Australian reference reported what initial offence was committed by Indigenous and non-Indigenous prisoners who died by homicide in custody (Dalton 1999). Among 56 prisoners, seven committed homicide (12.5%), three committed assault (5.4%), 14 committed sex offences (25%), four committed break and enter offences (7.1%), one committed an offence not elsewhere classified (1.8%), one committed a justice procedure offence (1.8%), one committed another good order offence (1.8%), 8 committed drug offences (14.3%) and two committed drink driving or other traffic offences (3.6%).

Legal Status: One reference reported the legal status of prisoners who died by homicide in custody (Dalton 1999). Of 56 prisoners, 7 (12.5%) were on remand, and 49 (87.5%) had been sentenced.

Length of sentence: One reference reported the total sentence length of prisoners who died from homicide in custody (Dalton 1999). One (3.6%) was serving less than three months, three (10.7%) were serving a sentence between 3 and less than twelve months, two (7.1%) were serving a sentence between 1 year and less than 3 years, sixteen (57.1%) were serving a sentence between three years and less than 10 years, and 5 (3.6%) were serving a sentence greater than 10 years. One prisoner was serving a life sentence (3.6%), but for 28 prisoners, their sentence length was not known or not applicable.

Time served prior to death: One study reported the time spent in custody prior to murder (Dalton 1999). The mean time was 2.77 years, with a median of 20 months. One (1.9%) prisoner served less than 24 hours, four (7.5%) served between one week and one month, nine (17.0%) served between one month and six months, and another nine (17.0%) served between six months and one year. Thirteen (24.5%) had served between one and three years, seven (13.2%) had served between three and five years and 10 (18.9%) had served greater than 5 years.

Time remaining to be served until released: One reference reported the amount of time remaining to be served until release for prisoners killed by homicide (Dalton 1999). Of 56 prisoners, there was an average time of 3.4 years, with a median time of 2.5 years. One (2.2%) had one week left on their sentence, four (8.9%) had between one week and one month, one (2.2%) had between six and twelve months, thirteen (28.9%) had between one and three years, four (8.9%) had between three and five years, eleven (24.4%) had between five and ten years, two (4.4%) had more than ten years left on their sentence and one (2.2%) was serving a life sentence.

1.4.2. Non-Indigenous deaths in custody only (or did not specify whether Indigenous people were included or not)

Three references reporting non-Indigenous deaths in custody only, or did not specify whether Indigenous people were included. These references were all international; specifically, from the United States. All three references reported demographic factors, and 2 references reported risk factors of individuals who died in custody by 'other' causes. The three references reported the other cause of death as homicide (Reidy 2020, Cunningham 2010, Reidy 2017).

Age: Four references provided information relating to age. Two reported mean age only, with the mean being reported as 34.3 years (SD 7.4) in Hedge et al (2020) and 43.0 years in Reidy (2017). Two references reported mean age and age groups; Cunningham (2010) reported mean age of 35.3 years and age groups, with most victims being aged between 40-49 (40%, and Reidy (2020) reported an average victim age of 35.6, and of 37 prisoners killed by homicide, 20.7% were less than 25 years old, 27.6% were aged between 25-29, 24.1% were 30-39, and 27.6% were over the age of 40.

Gender: One study reported frequencies of male and female deaths due to other causes, namely homicide. Of these studies, one reported that males made up 97.10% of deaths, and females constituted 2.9% (Cunningham 2010).

Race/ethnicity: Among the two references reporting race/ethnicity as frequencies, all were reported as percentages. In one study of 35 prisoners who died of homicide in prison, 11.4% were white/Caucasian, 28.6% were African American, 54.3% were Hispanic, and 5.7% were other (Cunningham 2010). One study examining homicides in prison reported that 88.9% of individuals were white (Reidy 2017).

Nationality: One reference reported whether individuals that had died from other causes (homicide) were born overseas. This report stated that 88.6% of victims were born in the United States, zero were from Mexico, and 11.4% were from somewhere else (Cunningham 2010).

Education: Two references reported whether victims of homicide had attended high school. One reference noted that the average grade completed was 9th grade (Cunningham 2010), and the other noted that 41.7% had completed a high school diploma (Reidy 2017).

IQ: One reference reported the average IQ of prisoners who had died from homicide in jail was 80.4 (Cunningham 2010).

Member of a gang: One reference reported whether prisoners who died of homicide in jail were members of a gang 33.3% of prisoners killed were gang members (Reidy 2017).

Committed prior violent offence/extensive criminal record: One American reference reported the criminal history of prisoners who died by homicide in jail; all individuals had a conviction for a violent offence (Reidy 2017).

Length of sentence: One references reported that the average sentence length for prisoners who died by homicide in prisoner was 26.6 years (Reidy 2017).

Time served prior to death: One reference reported that the average time already served of prisoners who died by homicide in jail was 9.9 years (Reidy 2017).

Prior disciplinary violations: One reference examined the prior disciplinary violations of prisoners who died by homicide in prison. Of 274 total violations, 30 (10.5%) were serious, 14 (5.1%) were assaultive, and 10 (3.6%) were injurious (Reidy 2017).

TOR 3: Good practice and protective elements for high-risk prisoners

2.1 Suicide Only

2.1.1. Indigenous deaths in custody only

This reference did not report information related to good practice and protective elements for prisoners.

2.1.2 Indigenous and non-Indigenous deaths in custody

Overall, four references discussed good practice and protective elements for prisoners that die in custody from suicide, of which 3 were Australian (Department of Justice and Regulations – Justice Health 2015, Willis et al., Camilleri et al. 2008) and one New Zealand (Medlicot 2001).

The main points from the three Australian references were:

- increase staff training in suicide prevention and emergency response procedures;
- provide prisoners with support services and programs to enhance their social, functional and job-related skills;
- conduct suicide risk assessments and screenings and implement prevention strategies; and
- provide a supportive correctional environment or culture and include support from family and other visitors.

The New Zealand reference suggested that good practice for prisoners involved having a focus on shared management of suicide risk (i.e. a teamwork approach) whereby each prisoner has an individually-designed treatment plan which combines risk assessment, human and individualised care and attention to detail (Medlicot 2001).

2.1.3. Non-Indigenous deaths in custody only (or did not specify whether Indigenous people were included or not)

Twelve references discussed good practice and protective elements for prisoners that die in custody from suicide (Anonymous 1974, Anno 1985, Borrill 2002, Berman & Canning 2021, Canning & Dvoskin 2016, Duthe et al 2013, Dye 2010, Hanson 2010, Hawton et al 2014, Kovasznay et al 2004, Ministry of Justice 2015, Rogan 2018, Way et al 2005,). All references were international. The main themes from these 12 references were:

- conduct suicide risk assessments and screenings;
- increase staff training in suicide prevention and emergency response procedures;
- improve communication and teamwork between staff and with external health professionals;
- provide adequate access to mental health services and other services such as drug rehabilitation and detox programs;
- improved observation and monitoring of at-risk prisoners;
- allow visits from family and friends (this may include allowing prisoners to leave facilities for education or employment);
- conduct reviews of deaths in custody; and
- improve relations between corrections staff and prisoners.

2.1.4. Deaths where Indigenous status or race/ethnicity was not reported

Twenty-five references discussed good practice and protective elements for prisoners that die in custody from suicide (Awofeso 2010, Bell 1999, Bartoli et al 2018, Bonner 2000, Chui 2018, Cliquennois 2010, 2012; Cramer et al 2017, Hatcher 2009, Hayes 1994, 1999, 2013; Howard League 2016, 2017, House of Lords& House of Commons Joint Committee on Human Rights 2017, Independent Advisory Panel 2017, Kellogg et al 2014, Knoll 2010, Konrad 2007, Lester 1994, Malcolm 1975, McHugh 1997, Meloni 2021, The Harris Report 2015, Scott 2015). All references were international. The main themes from these 25 references were:

- conduct suicide risk assessments and screenings;
- increase staff training in suicide prevention and emergency response procedures;
- improve communication and information exchange between staff and with external health professionals;
- provide adequate access to mental health services and other services such as drug rehabilitation and detox programs;
- increased use of trained mental health professionals such as psychologists and psychiatrists;
- improved observation and monitoring of at-risk prisoners;
- have individual mental health treatment plans for prisoners;
- help prisoners with preparation for release, prior to them being released from prison;
- allow prisoners to leave correctional facilities for in-patient psychiatric hospital treatment if required;
- provide meaningful activities for prisoners e.g. physical activity, education;
- reduce rates of incarceration for women;
- improve staff to prisoner ratios;
- develop and implement suicide prevention programs
- address issues of bullying;
- increase accountability of prisons in relation to overcrowding and maintaining specified staffing levels.

2.2. Unintentional Only

The three references that examined individuals who died in custody from unintentional causes did not report information related to good practice and protective elements for high-risk prisoners (Hegde et al 2020 Hvozdozovich 2020, Miguel-Arias et al 2017).

2.3. Natural Causes Only

Six references reported information with respect to good and protective elements for prisoners who die from natural causes in custody (Binswanger et al. 2014, Byrne et al. 2020, Levy et al 1999, Levy et al 1999, Ratcliff 2000, Prisons and Probation Ombudsman 2021). All references were international. The main points from these 6 references were:

- Provision of adequate pain and symptom management for terminally ill prisoners, including adaptation of diet for 'comfort'. Additionally, have comprehensive care plans and advance care planning (Ratcliff 2000).

- In relation to tuberculosis, adopt a human rights-sensitive approach to tuberculosis control by adapting and applying existing guidelines for HIV/AIDS (Levy et al. 1999). Additionally, have a functional health service present within the prison (Levy et al. 1999). Levy et al(1999) also stated that it was important to monitor and minimise prisoner movements should a prisoner be suspected of having tuberculosis.
- Implementing smoking bans in prisons to reduce smoking-related deaths (Binswanger et al. 2014).
- In relation to the COVID-19 pandemic; implement social distancing, handwashing, wearing personal protective equipment (PPE) and quarantine protocols. Additionally, conduct risk assessments and ensure an effective communication system is in place to notify prisoners and staff of those who are shielding or self-isolating due to COVID-19 (Prison and Probations Ombudsman 2021).
- In relation to COVID-19; suspend prison visits, test inmates and staff, suspend programming, quarantine infected inmates and lockdown prison populations. Consider early release of prisoners (Byrne et al. 2020).

2.4. 'Other' Only

One Australian reference reported information related to good practice and protective elements for prisoners who died in custody from 'other' causes, namely, *neglect* (Freckleton 2009). No international references reported information related to good practice and protective elements for prisoners who die custody from 'other' causes.

The article by Freckleton (2009) discusses the coronial decisions and recommendations made in relation to two deaths in custody (one Aboriginal man and one Caucasian man) that resulted from a lack of quality and timely medical care being provided at the time of their deaths. Good practice and protective elements were discussed in relation to improving medical assessments of prisoners and prompt provision of medication, in addition to providing education to officers regarding healthcare and administration of medication. There were also recommendations provided in relation to the transportation of people in custody as one death occurred when a man died from heat stroke while being transported in a vehicle.

TOR 7: Technology / built environment prevention strategies

3.1. Suicide Only

3.1.1. Indigenous deaths in custody only

This reference did not report information related to technology and built environment prevention strategies.

3.1.2. Indigenous and non-Indigenous deaths in custody

Overall, five references discussed technology and built environment prevention strategies for prisoners that die in custody from suicide, of which four were Australian references (Camilleri et al 2008, Eyland et al 1997, Department of Justice and Regulations – Justice Health 2015, Willis et al. 2016,). One reference was from the United States (Jordan et al. 1987). The main strategies from the four Australia references were:

- removing hanging points from cells that enable hanging;
- place prisoners at risk in cells based on their needs;
- install security cameras and duress alarms;
- include a safe cell or observation cell in each correctional centre
- avoid the use of strip/observation/sterile cells and minimise the use of seclusion. However, one reference suggested installing a safe cell/observation cell in each correctional centre (Eyland et al 1997).

The U.S. reference (Jordan et al. 1987) mentioned the following strategies: remove metal double bunks for a single concrete sleeping bench, put plexiglass covering over the cell bars, repainting, improved recessed lighting fixtures, and install a sound and video monitoring system.

3.1.3. Non-Indigenous deaths in custody only (or did not specify whether Indigenous people were included or not)

Seven references discussed technology and built environment prevention strategies for prisoners that die in custody from suicide (Canning & Dvoskin 2016, Rogan 2018, Way et al. 2007, Anno 1985, Anonymous 1974, Hanson 2010, Kovasznay et al. 2004). Six were from the U.S. and one was not specified. The main strategies from these seven references were:

- ease overcrowding in prisons;
- remove hanging points/fixtures in cells that enable hanging;
- reduce presence of prison bars;
- remove or reduce use of solitary confinement and isolation or segregation of prisoners; and
- enhance observation mechanisms of social housing.

3.1.4. Deaths where Indigenous status or race/ethnicity was not reported

Eleven references discussed technology and built environment prevention strategies for prisoners that die in custody from suicide (Atlas 1989, Chui 2018, Cliquennois et al. 2010, Cramer et al. 2017, , Independent Advisory Panel 2017, Konrad et al. 2007, Lester 1994, 1995; McHugh 1997, Meloni 2021, The Harris Report 2015,). All references were international. The main strategies from these 11 references were:

- remove hanging points/fixtures in cells that enable hanging;

- install security cameras to allow greater monitoring of at-risk prisoners;
- place at-risk prisoners in shared cells;
- place telephones in cells to allow prisoners to call family and friends outside prison;
- ensure prisoners have adequate time outside cells for exercise and other activities;
- place at-risk prisoners in cells near staff; and
- increase monitoring of at-risk prisoners.

3.2. Unintentional Only

The three references that examined individuals who died in custody from unintentional causes did not report information related to technology and built environment prevention strategies (Hegde et al. 2020, Hvozdoch 2020, Miguel-Arias et al. 2017).

3.3. Natural Causes Only

One international reference discussed technology and built environment prevention strategies for prisoners that died from natural causes (Ratcliff 2000). In relation to terminally ill prisoners, it was important that the environment be adapted for 'comfort', although details were not provided (Ratcliff 2000).

3.4. 'Other' Only

One Australian reference reported information related to technology and built environment prevention strategies for prisoners who died in custody from 'other' causes, namely, *neglect* (Freckleton 2009). No international references reported information related to technology and built environment prevention strategies who die custody from 'other' causes.

The article by Freckleton (2009) discusses the technology and built environment prevention strategies in relation to the case of an Aboriginal man who died from heat stroke while being transported in a vehicle. It was recommended that the physical environment of vehicles transporting people in custody are safe; having a functioning panic button/duress alarm in the rear area of the vehicle that is clear and accessible, installation of remote temperature monitoring system, reviewing the need to transport prisoners over long distances, and ensuring that policies and procedures to ensure the safety of persons to be transported by staff and private contractors are adhered to.

Conclusions and Limitations

In summary, this scoping review of deaths in custody found that the majority of references focussed on deaths from suicide that were performed in the United States. There is limited research comparing deaths in custody between Indigenous and non-Indigenous populations, however the majority of this existing research is located in Australia. The majority of references reported demographic characteristics such as age, gender and race/ethnicity with fewer references reporting individual risk and protective factors. Irrespective of cause and manner of death, a greater proportion of men than women have died in custody. In relation to deaths in custody by suicide, there were trends in relation to marital status (a higher proportion are single) and index offense (a higher proportion are charged or convicted of a violent offense).

There were relatively fewer references that provided information on good practice and protective elements for high risk prisoners and technology and built environment prevention strategies. Overall, protective and prevention strategies that were suggested by references were about increasing risk assessments for suicide and implementing suicide prevention programs, providing more health and social support services for prisoners and removing elements in cells that can be used as hanging points.

The findings of this scoping review should be interpreted with caution as the references reporting primary data were largely descriptive and used retrospective cross-sectional data which records the presence of a characteristic or factor among a particular population. This means that cause and effect, or the relationships between deaths in custody and socio-demographic characteristics or risk and protective factors, could not be determined. Furthermore, information pertaining to protective and preventative strategies were largely discussions or commentaries and not based on research evaluating the implementation and effectiveness of strategies or programs to reduce the incidences of deaths in custody (by any cause or manner of death).

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