

The Academy for the Judiciary, the Ministry of Justice, Research Study

Understanding and preventing stranger/indiscriminate murders

Executive Summary

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(The views expressed in this report are those of the authors, not necessarily those of the Ministry of Justice (nor do they reflect Government policy))

Abstract

The aims of this study are to clarify the definitional issues pertaining to indiscriminate murder, analyze relevant policies in different countries, collect evidence in Taiwan and make recommendations.

Based on our empirical research findings, “indiscriminate murder” is our preferred proxy term for “random killing” or “mass/stranger killing”. There are two sub-categories of indiscriminate murder – classical and non-classical. Classical indiscriminate murders are cases involving offenders with randomly chosen times, places, and victims to kill without any definite motivation. Non-classical indiscriminate murders are similar but with an element of personal motivation.

Our literature search and review found that countries defined indiscriminate murder mainly based on their own previous societal experiences and developed policies thereafter. For example, Norway, after the Breivik case, focused on improving the leadership response, identifying risk populations, active police operations, information exchange and communication. Japan, with more than fifty indiscriminate murder cases over the past 10 years, emphasizes the social, psychological and mental status and policies in relation to potential risk populations, while mostly sharing a similar approach, Taiwan also attempts to link drug abuse issues with such crimes. The USA, on the other hand, focuses on mass killing and develops a full set of risk assessment, management, classification, and diversion protocols.

In terms of evidence-based policies, this study uses a multi-method research method. A specially designed questionnaire was distributed to a control group (n=50) and four murder inmate groups (n=211, two invalid), namely, indiscriminate murder (5%), stranger murder with motivation (28%), domestic murder (30%), and acquaintance murder (37%). The response rate was 91%. There were fifteen in-depth interviews with indiscriminate murder inmates, with full psychiatric examinations and psychological assessment by the research team. Their previous court psychiatric forensic reports, if any, were provided as supplementary documents for analysis.

The study’s main findings are, first, there were no significant differences among the five groups on self-esteem, violent attitudes, cynicism, social alienation and mental health; secondly, compared with the control group, indiscriminate murderers had much lower empathy, raised in multiple high risk family situations, failed to form intimate relationships and with high school dropout rates, but no significant differences with other murder groups in terms of anti-social personality, feelings of

loneliness, depression, substance abuse, and prior criminal record; thirdly and finally, there are similar personality traits within the four murder groups, in terms of self-esteem, violent attitudes, cynicism, feelings of anger, depression, social anxiety, lack of intimate relationships, substance abuse, drop out, high risk family, and prior criminal records. This finding would suggest there is little sense in developing specific prevention strategies in respect of indiscriminate murder.

Our study suggests that an integrated secondary prevention and tertiary prevention network is much more important than primary prevention. Apart from sharing the e-high risk database, we recommend appointment of a high-rank social safety team manager to be in charge of supervising the whole process including in-take, classification, resources allocation and follow-up assessment. The study also tested an assumed integrated model which would have merged the existing six social safety databases in Taiwan with our 15 individual cases. We found that the highest predictor hit rate would be in the adult prior record judicial system (0.73), followed by national mental health records (0.60), high risk family welfare reporting system (0.53), drop out educational reporting system (0.47) as well as juvenile prior record system (0.47). Among the 15 cases, less than 2 percent were unaccounted for in the five social safety systems if all systems work as they are designed. Less than one percent was missing if the national suicide reporting system is included.

Keywords: indiscriminate murder, random killing, social safety network

Background and purpose

When addressing issues pertaining to indiscriminate murder/harming, the most difficult task which confronts the researcher is how to define the phenomenon. Indiscriminate murder/harming usually implies that offenders do not have any specific selection criteria for choosing his/her victims; anyone who happens to appear at the time-space where the offender engages in killing/harming is a potential victim. Therefore, indiscriminate murder/harming carries an inevitable element of randomness, in which offenders and victims are mutual strangers and not intimate in any way. This randomness could be said to apply equally to aspects of time, place, victims and means. However, it is doubtful whether an offender could achieve the goal of killing/harming through total random action alone, which may signify a loss of control and subsequently not be recognized as a criminal action in criminal law.

In its research on indiscriminate murder, Japan's Ministry of Justice selected only cases of mass killings (where the number of victims exceeded three) as their target cases (李茂生, 2016). The reason was that oversampling of a large number of indiscriminate murder cases may have rendered research cumbersome. However, in our project the uncertainty about who could become a victim is a necessary condition to define so-called "indiscriminate murder/harming". In our view, the number of victims should not be regarded as the key element of this type of crime. That is to say, even if there is only one victim, the indiscriminate victim/s and means of killing could still have a significant impact on personal and societal perceptions of safety. Thus, it is not reasonable to define the severity of an event merely by focusing on the number of victims. In Taiwan, our understanding in research terms of the phenomenon of indiscriminate murder is at a nascent stage. Our view is that it would not be helpful to be overly restrictive with respect to number of victims.

In the U.S.A., mass killing is defined by its Federal Bureau of Investigation (FBI) as events in which offenders kill four or more victims at the scene, and usually commit suicide after the killing or are shot dead by the police. The motives of such killings include seven categories: anger, gang activity, property, ideology, power, mental illness, and sex. However, the above definition of mass killing only concerns the outcome of the event, and thus does not address motives for killing or relationships between killers and victims. The definition functions merely as part of preparatory guidance for the law enforcement agency dealing with such events. It can

be regarded more as an operational definition, rather than a research oriented one, and thus does not facilitate understanding, analysis or prevention.

Based on the motives of killing and criteria of victim selection, Petee et al. (1997) developed a complex scheme for categorization of mass killings. The scheme comprises nine categories: 1. Victim selection; 2. Place selection; 3. Random selection of victims and places; 4. Family/emotional conflicts; 5. Individual conflicts or emotional turmoil; 6. Inducement by other crimes; 7. Gangster killings; 8. Inducement by ideology; 9. Unknown reasons, which means no recognized motive exists. According Petee et al., only category 3 includes random selection of victims (or “indiscriminate” killing). Moreover, theoretically, such victims and offenders are mutual strangers. The other eight categories are not compatible with the requirement of randomness. Furthermore, the Petee et al classification does not take account of the roles of mental illness, personality or mood impairment in motives for killing and in our view is insufficiently comprehensive.

In defining indiscriminate murder, the most important points are “randomness” or “indiscriminateness”. Randomness implies that due to the influence by uncertain factors, one repeated phenomenon is in fact unpredictable even though its probability distribution could be estimated. The above unpredictability means uncertainty in place and time. Indiscriminateness means the uncertainty in target selection. In general, when it comes to random killing, usually the victims are not pre-selected, therefore, randomness could be deemed to include indiscriminateness.

Integrating all the above considerations, our research team concludes that indiscriminate murder/harming as a term is more suitable than random killing/harming. The randomness in person, time and place may actually carry an underlying internal subjective logic or reasons among the offenders. In addition, the targets are not necessarily strangers to the offenders. They might be indiscriminately selected acquaintances or family members. Therefore, the research team defines typical indiscriminate murder/harming as: *events of killing/harming in which there are no identifiable motives involving emotion, property or hate for the killing/harming of non-preselected victims, or there are no pre-selections of offense time and place.* Our research project includes cases of both typical and atypical indiscriminate murder/harming which we address in terms of prevention and management policies later in our report.

When the rare events of indiscriminate murder/harming occur, the mass media tends to place emphasis on offenders' mental status or mental illness. Thus, the public might have the impression that offenders of indiscriminate murder/harming are persons with mental illness, and therefore, the solution to the phenomenon is strengthening our approach to mental health care. What is less well recognized is that media reports are selective in the types and content of their description of these horrific events. In addition to mental illness, the published scholarly literature focuses on other individual factors of indiscriminate murder/harming, such as physical illness, character traits, drug or alcohol use, previous criminal history, and unemployment. Relevant environmental factors include family interaction, school life, job conditions, etc. Even at the socio-cultural level, macroscopic factors like the job market environment, the economic prosperity cycle, the education system, the health care system, criminal justice institutions, cultural variation, and so on. All these identified factors might play a role with respect to indiscriminate murder/harming. Unfortunately, mass media tends to emphasize single factor explanations. Neglected are the more detailed and comprehensive systematic explorations which note multi-factorial issues. Too much focus on the criminal behavior of persons with mental illness engenders stigmatization, reduces opportunity of acceptance by self and society, and thus leads to an inappropriate focus on the mental health system (Metzl & MacLeish, 2015).

Taking account of the foregoing, our research project aims to achieve the following purposes:

1. Identifying the criminal characteristics of random killing or indiscriminate murder/harming events, and the difference between such events and stranger killing.
2. Understanding the crime incidence rates, triggering situations, motives of killing, case characteristics, and all the informative social impact factors of stranger and indiscriminate murders.
3. Collecting relevant data related to policy and practice for preventing and managing indiscriminate murder in Japan, the U.S.A. and Norway, in order to have a comparative understanding of Taiwan's similar events, our government's response strategies, and assessment of similarities and differences. by comparison..
4. Examine the role for family, education, labor, interventions with offenders, rehabilitative interventions with former offenders, mental illness treatment, and public

safety regulatory systems, and conducting systematic examination of whether governments' preventive strategies are optimally designed.

5. Proposing strategies for enhancing public security via integration of our analysis of existing scholarly opinion, collection and analysis of international literature and available domestic empirical data.

Brief review of the relevant literature

Theories and empirical research on homicide

Motives and relationships in homicide

Our literature search and review of previously published scholarly research reveals that there are several ways of categorizing homicidal behavior. First, homicide may be separated into expressive killing and instrumental killing. The main characteristic of expressive killing is offenders' emotional expressions, such as anger, envy or fear towards the victims that lead to impulsive killing behavior. On the other hand, instrumental killing stresses the offenders' killing behavior as the result of cognitive operations and calm behavior for achieving goals such as robbery, eliminating eye witnesses, or turf war (Cao, Hou, & Huang, 2008; Salfati & Canter, 1999). However, some scholars argued that this kind of categorization is too artificial since every homicide has its own purpose. Components of emotional expression and instrumentality might co-exist in a homicide. The major difference is the relative weights attached to these two components (Felson, 1994; Rosenfeld, 2014).

The second way of categorizing homicide focuses on the relationship between the offender and the victim. Killing behavior between strangers is shocking to society. People have many opportunities to encounter strangers once they leave home. They develop their own level of guardedness based on their feelings of security (Salfati & Canter, 1999). Therefore, scholars argued that our fear of becoming victims mainly originates from our fear of strangers (Riedel, 1987). Most victims of homicide know each other, and it occurs in a domestic context. Yet people worry more about becoming a victim of stranger killing. Arguably, if media reports of stranger killing increase, the public will be more concerned about security generally.

Prevalence rate of stranger homicide

International and domestic criminal justice data have shown that cases of stranger killing has been a minority in homicide. 周儵嫻 (2016) compared homicide prevalence estimates by government authorities or research among Taiwan, the U.K. and the U.S.A. (Table 1) According to a 2013 estimate by the U.S. FBI, when instrumental stranger homicide, such as among gangsters, were not excluded, only 19% belonged to the category of stranger killing. Two investigation reports by the U.K. Home Office showed that before 2000, 20% of homicide cases were between strangers. The prevalence rate increased to 30% by 2015 (excluding victims aged below 16). In the annual reports of homicide and suicide cases of persons with mental illness in the U.K., it is estimated that in total 1,563 cases of stranger homicide comprised 25% of the pool of all homicide events. Only in 7% of stranger homicide events, the offender was a person suffering from mental illness (HQIP, 2015) .

Table 1 Percentage of stranger homicides among all homicides in Taiwan, the U.K. and the U.S.A.

| Country | Percentage % | Source and size of samples | Year | Data source |
|-----------------|--------------|--|-----------|--------------------------------------|
| USA | 19 | 12,253 police registered completed homicide cases in FBI statistics (5,572 cases not solved) | 2013 | FBI, 2015a |
| England & Wales | 25 | 7,265 convicted cases | 2003-2013 | HQIP, 2015 |
| England & Wales | 30 | 518 police registered completed homicides (95 cases unsolved) | 2014-2015 | Office for National Statistics, 2016 |
| Taiwan | 57 | 813 homicide offenders serving prison terms | 1998 | 楊士隆, 1999 |
| | 32 | 308 convicted cases by a court | 1994-1998 | 侯崇文, 1999 |
| Taiwan | 49 | 1,161 homicide offenders serving prison terms | 2002 | 謝文彥, 2002 |

| | | | | |
|--------|----|---|-----------|-----------|
| Taiwan | 46 | 5,283 police transferred cases including completed and attempted homicide | 2006-2014 | 許春金, 2015 |
| Taiwan | 27 | 421 police transferred cases including completed and attempted homicide (stranger homicides) | 2015 | 周愷嫻, 2016 |
| Taiwan | 14 | 421 police transferred cases including completed and attempted homicide (indiscriminate homicides) | 2015 | 周愷嫻, 2016 |
| Taiwan | 6 | 421 police transferred cases including completed and attempted homicide (indiscriminate homicides during daytime) | 2015 | 周愷嫻, 2016 |

Data source: 周愷嫻 (2016) .

As shown in Table 1, if restricted to annual cases notified by the police, the 27% estimate by Chou is closer to those of Ho et al., the U.S.A., and U.K. Unfortunately, no matter whether we talk about murder in our country, the U.S.A. or the U.K., there is no statistical estimate in either literature or government authority data regarding the prevalence of indiscriminate murders (either by narrow or general definitions).

Scholars such as Young, Hsieh or Hsu in Taiwan were inclined to overestimate the prevalence of stranger killings. One potential cause was that they did not separate the calculations of case numbers from offender numbers. If there are several offenders in a case, repeated counting of offenders in the same case would create an overestimation.

Of course, another potential cause of false positive estimates originates from coding omission. It could happen that no relationship known was interpreted as ‘no relationship’ and erroneously included in the category of stranger homicide. This would push up the statistical estimate of stranger homicide. This issue must be kept in mind when any data analysis is conducted. But, some scholars argued that in the U.S.A. stranger homicide was actually underestimated. Compared to the prevalence estimate of stranger homicide in the Supplementary Homicide Reports (12.5%-18.4%

in 1976-1985), US police data showed higher estimates of stranger homicide (Riedel, 1987).

Causes of indiscriminate murder/violence crime

Due to the specific characteristics of homicide, the literature review has shown that past research concentrates on killings between acquaintances or intimate partners. Studies on the characteristics of stranger killing have been rare.

Analyzing the empirical data of killing involving drug use, Goldstein et.al. found that motives for homicide included: drug effect of impulsivity or anger after its use (motives brought about by pharmacodynamics); instrumental homicide for obtaining economic benefits, which include activities for obtaining drugs (economic compulsive motives); homicide committed in the engagement in organized crimes that involve the grabbing and distribution of drugs (systematic motive); and multi-dimensional motives that involve all the above categories. Some scholars also found that as the consumption of alcohol diminished in society so too the prevalence rate of violent homicide also diminished. Of course, the decrease was not due to a single factor. Possible factors also included the reduction of gun utilization, increase in the number of criminals serving sentences, changes in the cocaine market, and the police's crack down on street level misdemeanors (so called 'Zero-tolerance' policing) (Goldstein, Brownstein, & Ryan, 1992).

Based on the data from the Pittsburgh Youth Study, criminologists Loeber and Farrington followed longitudinally 1,043 persons from their childhood or adolescence through adulthood, they found that 37 persons charged with homicide. Among those 37, individual risk factors included: past experience of gun possession, traffic vehicle theft, pure physical aggression, individual fraud, positive attitude towards criminal behavior, favor of drug possession, and school disciplinary probation, etc. All the above risk factors could be recognized as part of a risky life style in the life course of an individual (Loeber, Farrington, & Stallings, 2011).

Adopting the categorization scheme proposed by Marzuk et.al. in 1992 (based on epidemiology and case investigation data), Knoll (2012) created another scheme of categorizing mass murder considering the killer-victim relationship and the motives for killing. The first is the familial-depressed type, in which a depressed elderly male in a family, when suffering marital, financial or job problems, might kill family members to save them from future difficulties under cognitive distortions induced by depression. Or, they might think their intimate partners as having an affair or abuse

drugs themselves, and may commit mass murder and then suicide. The second is the specific community-resentful type; a person of this type might develop strong hatred against a specific identifiable group, culture or political activity and thus commit mass murder of members of the targeted group. The third type is the pseudo-community-psychotic; a persons of which might develop delusion of being persecuted by a specific group or community and thus commit mass murder of the targeted members out of hatred or revenge. The fourth type is indiscriminate-resentful; a mass murderer of this type might have long-term anger, depressed mood, or delusion of persecution, however as they commit mass murder in a public space they do not differentiate the identities of the victims; even when they pick up specific location and time, the choice is made for the convenience of finding potential victims. The fifth is workplace-resentful; mass killers of this type might develop extreme dissatisfaction against their supervisors, co-workers or working places, feeling that they suffer from unfair treatment and externalizing the blame against others. These mass murders might have tendencies to depression, delusion or narcissism and even full blown delusion of persecution (Knoll, 2012).

Fox and DeLatour (2014) argued that over the recent 30 years, mass murders in the U.S.A. tended to be planned actions with common motives (benefit, power, revenge, loyalty, terrorism, and so on). The psychological characteristics of these mass murderers included: depression, anger, social isolation, blame-externalizing, and strong interests in figurative violent leisure activities and weapons, and the authors conclude that current U.S. gun control and mental health policies fail to achieve a preventive purpose. (Fox & DeLateur, 2014).

Exploring indiscriminate mass school shooting events, some U.S. scholars argued that these shooters might have gone through the following psychological life course: from their early adolescent experiences on, potential murders may have had long term psychological stress and frustration, and then begun to be isolated from society. Lacking a friendly general supportive system in society, potential murders may gradually feel that these stresses are uncontrollable and unavoidable. Finally, potential murders might encounter some new event that brings forth to acute stress, which, no matter real or imagined, may act like the last straw that crashes an exhausted camel. Thus, stressed potential mass murderers may determine to commit mass murders and fulfill the final meaningfulness of masculine strength, gaining control, and actualizing their internal imaginations. Availability and large numbers of teachers and students in schools are probable reasons why mass murderers chose schools for convenience and commit the crimes there (Levin & Madfis, 2009).

It is important to consider whether the above research findings in the U.S.A. have external validity in Taiwan - for example, in the case of the mass murderer in Taiwan who chose a Taipei Mass Rapid Transit train as the location to commit the crime. One obvious reason was its “convenience” for the offender to kill in a closed space crowded by passengers while the train was running between two stops that have the longest distance from each other. However, the murderer claimed that actually he had a strong hatred against his two female classmates, and because he could no longer find them, he planned to kill the passengers indiscriminately as an alternative. In addition, even though he had suicide ideation, he did not attempt suicide. This was not compatible with the murder-suicide style as noted in some mass murder cases (Knoll, 2012; 吳建昌, 2016).

Research conducted by Japan’s Ministry of Justice on indiscriminate murder events (<http://www.taedp.org.tw/story/2828>) suggests that the majority of murderers in Japan were male, young, had poor relationships with family or friends, and experienced unstable work, finance and accommodation problems. In addition, many of them had no prior criminal conviction. Motives for committing the crimes included: dissatisfaction with one’s own situation, dissatisfaction with some targeted others, suicide or hopes of being sentenced to death, interests in killing or having desires of killing, hopes for being put in prison, etc. Their personality characteristics included: sensitiveness, self-criticism, inferiority, dysphoria-proneness, biased thoughts, and feeling of unfairness, dissatisfaction and anger. Components of psychopathology comprised: personality disorder (not necessarily antisocial), interpersonal isolation, violence tendency, abuse of alcohol or drugs, experience of being bullied or abused, etc. The report concluded that from the perspective of recidivism prevention it is necessary to conduct prevention and management of risk, mental illness and violence tendency, and social rehabilitation (e.g. medical care and social welfare, etc.)

(Richard-Devantoy 等人, 2009 ; Wallace, Mullen and Burgess , 2004 ; HQIP , 2015 : 9、82 ; 周儵嫻, 2016 ; 吳建昌, 2016 ; 吳臺齡, 2017 ; Coid, 1983; Swinson et al, 2011) .

The research literature reveals that among homicide perpetrators, persons having mental illness or mental retardation are the minority, of which schizophrenia, antisocial personality disorder and mental retardation are the most common diagnoses. Among stranger killers, about 5-7% might have mental illness or impairment. When a rare case happens, despite its rarity, the community might be induced to develop reactions of panic, stigmatization, and exclusion towards persons with mental illness or disability, whose rights to a good living and residence might thereby be highly

negatively impacted. Therefore, medical facilities and social welfare institutes ought to be included in social security networks (Nielsen et al., 2011; Swanson, 2011). Those persons suffering untreated first-episode psychosis might have 15 times higher risk of killing than after they receive treatment. Accordingly, scholars argued for the importance of timely and good mental illness treatment (M. M. Large & Nielsen, 2011). In addition, it was found that half of homicide victims were females. Compared to other violent crimes in which males comprised the majority of victims, the proportion of female homicide victims was high. Moreover, the proportion of homicide victims using alcohol within 24 hours before the crimes was higher than other crimes (Asnis, Kaplan, Hundorfean, & Saeed, 1997; Koh, Peng, Huak, & Koh, 2005).

To summarize, mental illness, personality disorder and alcohol/drug use might have particular impact on stranger homicides, which are worth further investigation through research. As there is a shortage of related detailed research analyses in Taiwan, we need to consider conducting such research as a matter of urgency in order to develop appropriate prevention and management policies.

Strategies for managing indiscriminate murder in Norway, Japan, the U.S.A. and Taiwan

In this section of our report we consider policy and practice regarding indiscriminate murder events in three overseas countries (and also including Taiwan). In seeking to prevent indiscriminate murder events, Norway recognizes the necessity to enhance the capability and leadership response to such events and the need to correctly identify the current group of people in the risk group. It emphasizes the police's capacity to mobilize resources, effectively respond to such events and develop optimal information exchange and communication among government agencies.

Japan and Taiwan instead tend to attribute indiscriminate murder to the criminals' individual level social, psychological and mental illness factors. Furthermore, in Taiwan, killers' illicit drug use problems are often specifically marked as the cause of indiscriminate murder. Therefore, policies in Taiwan are more oriented towards preventive support and follow-up of high risk groups.

The U.S. FBI, over recent years, has organized research conferences, as well as case conferences on how to manage mass killings. Integrating opinions from expert and practice agencies, The FBI recommends the establishment of a locally-based

emergency event risk management team via a five-stage framework of risk notification, categorization, assessment, management and resource link and referral. The team could meet regularly or as often as needed for dynamically revising the criteria of case identification and assessing whether to escalate or diminish the risk estimates of persons in a named list. Based on risk management science, it advocates a precautionary approach of monitoring and prevention, plus law enforcement during the events. However, it does not address associated wider issues such as education, medical care, or social policy. Nor does it discuss the causes of mass murder .

Compared to the other three countries, Taiwan’s current policy involves more government agencies and considers prevention and management from a wider perspective. Key characteristics include: strengthening family education through schools, employment counseling, and the call for media self-regulation. In Taiwan, in addition to mental illness and drug abuse being understood as potential causes of indiscriminate murder, family problems and unemployment are also major factors. Furthermore, while media reports deepen social fear and possible copycat effects, indiscriminate murder continues to occur, although its number is still low in the past decade.

Table 2: Government policies for preventing and managing indiscriminate murder in Norway, Japan, the U.S.A. and Taiwan

| Country | Norway (2012) | Japan (2013) | U.S. FBI (2015b) | Taiwan (2016) |
|---|---|--|------------------|---|
| Countries (administrative, legislative) | Leadership, information exchange; crime of engendering risk | -- | -- | -- |
| Judicial | -- | Recidivism prevention, risk assessment | participation | Monitor of drug users, rehabilitation and employment |
| Police administration | Leadership, mobilization, resources | -- | participation | Report, responding, police visibility, investigation, |

| | | | | |
|---------------------------|---|--|---|---|
| | | | | assisting the enforcement of mental health act |
| Medical care | Caring victims | Recidivism assessment, prevention and treatment of mental illness and violence tendency, popularized information of mental health, information accessibility | participation | Drug detoxication and treatment, psychotic patients |
| Crisis response mechanism | Local and central operation systems | -- | Establishing community crisis event management team | Local response mechanism, high risk individuals report system |
| school | -- | -- | Risk identifying and reporting | Family education, drug education, realizing family policy |
| Intelligence information | Information communication | -- | Dynamic collection and exchange of risk information | -- |
| Social policy | Establishing public community concerned events report | Recidivism assessment, identifying and counseling | participation | Strengthening employment, counseling high risk family |

| | | | | |
|-----------|--------|---|--|-----------------------|
| | system | suicides/mentally ill patients, suicide prevention, creating opportunities of social mobility | | |
| media | -- | -- | -- | Media self regulation |
| community | -- | Strengthening social links, creating feelings of belonging, promoting public vigilance, reporting events, caring others | Encouraging reporting, promoting positive behavior | -- |

In the table, "--" means that the specified country did not have focused policy recommendation

Research design

Following approval by the National Taiwan University Hospital Review Committee, our research project team executed our project using the following methods.

Qualitative interviews with a sample of incarcerated inmates and case information collection and analysis

The project conducted stratified sampling of incarcerated murderers in jails or prisons who met the qualification criteria. In addition to qualitative interviews, researchers engaged further qualitative interviews with the convicts' family members, the victims and the victims' family members (after obtaining their consent).

Interviews and data collection and analysis

There were 15 selected convicts of stranger or indiscriminate murder in the project. Based on the perspective of life course analysis, researchers conducted interviews with the convicts and touched on the following themes: developmental history, educational history, occupational history, family history, friendship and other social activities, illness history, history of alcohol and/or substance use, criminal history, interviewees' understanding of the case, socioeconomic and cultural factors, feelings after the offences, and so on. Beyond conducting the interviews, researchers collected information relating to the offences, such as decisions by the courts at different levels, prison/jail documents about the offender, and the offender's forensic psychiatric assessment reports.

Interviews with the victims (or their family members/significant others)

Our research team were unable to obtain access to the personal data of the victims through the court decision documents or via any direct approach. The offenders did not have acquaintance with the victims and could not make a referral. Therefore, our project did not succeed in obtaining information on victims or their family through the above routes. However, thanks to local support groups' referral we were able to obtain some insight and understanding on victims (their family members) of indiscriminate murder; our project completed interviews with one surviving victim of the above mentioned Taipei MRT massacre and two victims' family members. The major themes of the interview are perceptions (harm, loss of

their friends or family, etc.) of victims (their family members) towards the offence, their comments on the offenders, and their experiences of the litigation process.

Self-compiled Questionnaire survey

Based on the above collected data, documents and interview information, our researchers independently developed a questionnaire with 9 dimensions, the detailed categories of which are shown below:

1. Demographic data: sex, age, education, occupation, marital status, community, religion
2. Family: structure, relationship, finance, rearing parent, substance, parent mental illness, parent crime
3. Case characteristics: accomplice, victim, motive, means, tool, location, time, crime scene, attitude after crime, forensic psychiatric assessment
4. Previous conviction: adolescence, adulthood, prison/jail experience
5. History of healthcare: trauma, inheritance, psychiatric, medication, psychic trauma
6. Drug and alcohol: illicit drugs, alcohol, betel nuts, tobacco
7. Psychological characteristics: antisocial, dignity, empathy, violence, anger, loneliness, depression, cynicism, anxiety
8. Social support: family, friend, prison/jail
9. Significant events: negative, positive

To enhance validity, criminologists, psychologists and survey experts (in total 11 persons) were invited to review the first version of our self-compiled questionnaire. Our research team also invited two laypersons to test the questionnaire to locate any further issues with the questionnaire. Our research team finalized the questionnaire after further revision.

Expert- and scholar focus groups

Our research team invited experts and scholars on the topic of stranger killing to participate in two focus groups to address policy issues from different perspectives. In total there were 19 members in the two groups. The disciplines represented comprised criminology, criminal justice, mental health care, public administration, law, education, social work, psychology, labor, and others. Also invited were practitioner experts with experience in dealing with social security systems in education, police administration, health and welfare, justice, and so on. Based on

analysis of data and suggestions collected from these focus groups, our research team further revised our policy recommendations.

Research sample

With the consent by the Ministry of Justice, in March 2017, our research team obtained a list of a total of 2,138 prisoners serving sentences with a homicide conviction. The conditions of those who were excluded from the research were: entering prison before 2007 or after 2016, homicide attempt, foreigners, non-adults and prisons located in very remote areas of Taiwan, and leaving prisons in 2016-2017 after serving the full prison terms. In total, following such exclusions, the total came to 811 persons eligible for further consideration.

We first contacted prisons with the highest number of prisoners. In the beginning, in the eight prisons contacted, there were 467 potential subjects for questionnaire survey. However, only 244 prisoners, less than our predetermined sample size, could actually be included in the survey. This was because of the following reasons: unavailability of some prisoners' register records (e.g. prisoners applying for parole), foreigners, prisoners with very severe mental illness, those too physically or mentally handicapped to complete the questionnaire, those already transferred to other prisons or released, those receiving medical care under guard at the time of our survey, being away to meet with their family/friends, and so on. On the survey dates, potential prisoner subjects were brought to the pre-arranged location in the prison for our research team to inform them of the purposes and the procedures of our survey. In total, 22 prisoners (9%) refused to participate in the survey and 222 prisoner subjects completed survey. Finally, after error examination, only 209 survey questionnaire results were considered valid (Figure 2).

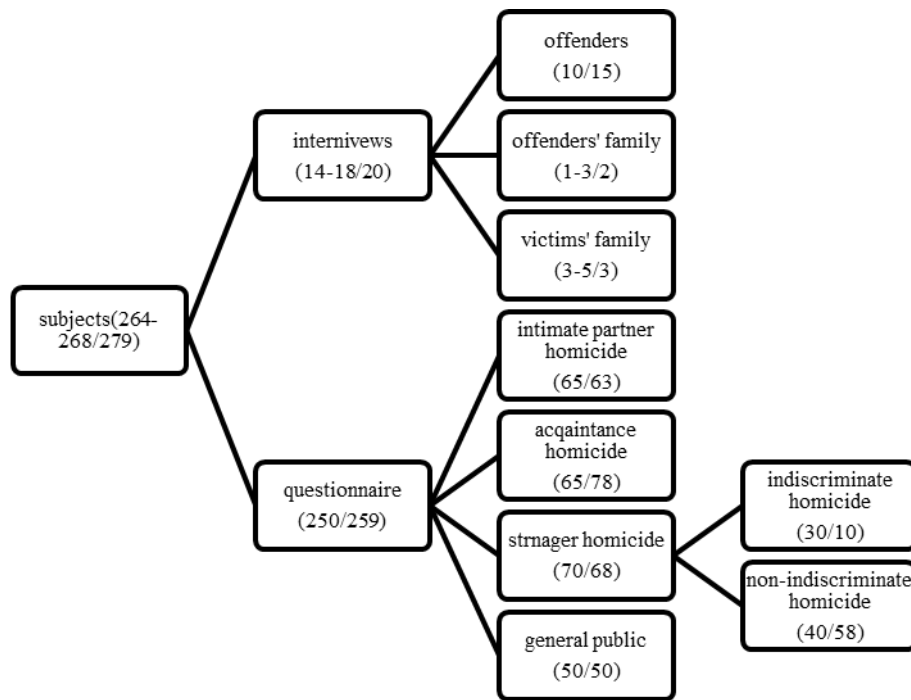


Figure 1 Categories and distribution of research subjects sample sizes (sample size: predetermined/actual)

The total number of completed valid questionnaire surveys were 259. Among them, 50 consisted of the non-prisoner subjects serving as our control group; 209 were the incarcerated homicide offenders. Between the offender group and the control group, Chi square analysis revealed significant differences in age, education and marital status, but not in religion. The section of personality traits in the questionnaire consists of 9 categories with unequal numbers of questions. Internal consistency check showed that although the alpha coefficient for the questions in the empathy category was 0.69, it was over 0.70 for all the others.

There were 18 potential subjects qualified for in-depth interviews regarding typical and atypical indiscriminate murder. After inquiring into their willingness to receive the interview and psychological examination, three of them did not consent. Our research team completed in-depth interviews with 15 subjects; 10 among them were typical indiscriminate killers based our research criteria and 5 were atypical. The locations of the offences were in Taipei, Taoyuan, Hsinchu, Miaoli, Taichung, Tainan, and so on. Most of the offences happened outdoors, but two happened inside of public buildings and one took place in in a residential building (Table 3).

Among the 15 interviewees, two refused to receive psychological examinations and two others skipped a minority of tests according to the assessment of the

psychologist in our team. Six interviewees did not receive any forensic psychiatric assessment in the criminal procedure dealing with their offences of indiscriminate murder. Among the nine interviewees receiving forensic psychiatric assessment, only one was deemed to have no mental illness or substance abuse. 12 out of the 15 interviewees were reluctant to notify their family members about our inviting family members for interview. One family member refused to participate. Only two family members completed the interviews (Table 3).

Table 3 Types, family contact, forensic psychiatric assessment of interviewees

| ID. | Criminal behavior | Type | Location | sentence | Interview with family | court forensic psychiatric assessment | Result of court assessment | *Psychological tests in our research |
|-----|--|-------------|---|---------------|-----------------------|---------------------------------------|---|--------------------------------------|
| O1 | Indiscriminate murder after glue sniffing | typical | In an alley of Taipei County (now New Taipei City) | Life sentence | No family visit | yes | Antisocial personality disorder, glue abuse | completed |
| O2 | Indiscriminate murder by poisoning commercial drinks | Non-typical | Inside of a convenience store in Taichung City | Life sentence | Mother refused | no | -- | completed |
| O3 | Indiscriminate murder of a taxi driver | typical | Inside of a taxi in Taipei County (now New Taipei City) | Life sentence | No family visit | yes | Organic psychosis, sedatives dependence | completed |
| O4 | Indiscriminate murder of a woman during sexual offence | Non-typical | Inside of a rented apartment in Taipei | 19 years | Completed | no | -- | completed |

| | | | | | | | | | |
|----|--|---------|--|-----------------------|------------------------|-----|--|---------------------------------------|--|
| | | | County (now New Taipei City) | | | | | | |
| O5 | Together with his friends, indiscriminate murder of a homeless person | typical | At a park pavilion in Hsin Chu City | 12 years | completed | no | -- | completed (**selective skip of CASI) | |
| O6 | Indiscriminate murder by setting fires after glue sniffing | typical | At an arcade along a street in Taichung City | Life sentence | Unable to reach family | yes | Glue abuse (no psychosis) | completed | |
| O7 | Indiscriminate murder by driving a car to hit a motorcyclist on the street | typical | On an express way in Taichung | 12 years | Unable to reach family | yes | Drug dependent, suspected schizophrenia. Diminished responsibility | completed | |
| O8 | Indiscriminate murder by setting fires after alcohol intake | typical | At a private residence in Taichung City | 21 years and 4 months | Unable to reach family | yes | No diminished responsibility; suspected mental retardation | completed | |
| O9 | Indiscriminate murder by attacking a pedestrian on a street | typical | On a street in Taoyuan | 15 years | Unable to reach family | yes | Schizophrenia, Delusion of persecution, auditory | Not performed Interviewee refusal | |

| | | | | | | | | |
|-----|--|-----------------|--|-----------------------------|--|-----|--|--|
| | | | | | | | hallucinatio n. schizophren ia | |
| O10 | Discriminate homicide attempt by setting fires on a pedestrian near a gas station | typical | At a motorcycle parking lot in Miao Li County | 7 years and 6 months | No family visit | yes | No mental illness | Due to inadequacy of time, CPT and WSCT were not performed |
| O11 | Indiscriminat e homicide attempt by manually strangling a nextdoor child | Non-t ypical | Outside of the offender's residence in Miao Li County | 7 years and 7 months | Unable to reach family | yes | Antisocial personality disorder with poor impulse control; suspected alcohol withdrawal and drug abuse | completed |
| O12 | Indiscriminat e murder of an farming women during sexual offence with a stone and a sharp object | Non-t ypical | At a meadow in the farming area in Hsin Chu | Death sentence | No family visit | no | -- | completed |
| O13 | Together with his friends, indiscriminat e murder of a | typical | At a park pavilion in Hsin Chu | 10 years and 7 months | Interviewee refused to allow contacting family | no | -- | completed (**selective skip of CASI) |

| | | | | | | | | |
|-----|--|-------------|---|-------------------|--|-----|---|---|
| | homeless person | | | | | | | |
| O14 | Indiscriminate murder by driving a car into a convenience store | Non-typical | At the convenience store in Tainan | Life sentence | Interviewee refused to allow contacting family | no | -- | Due to inadequacy of time, CASI and KMHQ were not performed |
| O15 | Indiscriminate murder of a child by throat slashing with a knife | typical | Inside of an indoor playhouse in Tainan | Life imprisonment | Interviewee refused to allow contacting family | yes | The 2013 assessment: no mental illness or depression; the 2014 assessment: schizoid personality disorder, partially borderline personality, suspected major depression when committing the crime; the 2015 assessment: no schizophrenia, suspected malingering. | Only a minor part completed |

*Instruments used in our psychological tests: CASI, BG, WAIS, CPT, WCST, AQ, EQ, KMHQ

**A simple instrument for assessing cognitive ability, CASI is often used for dementia evaluation. If a subject can perform well in WAIS, there is no need for the simpler and narrower CASI. All the three subjects not receiving CASI are young persons who rarely suffer dementia. Thus, to save time, CASI were omitted for these three.

After the questionnaires were retrieved, the research team checked subjects' answers to four sets of similar questions. If a subject's answers to the sets of questions were inconsistent, the questionnaire may be invalid.

Results

The ratio of indiscriminate murder cases

The study classified the sample of murder cases into four sub-categories based on the offender's motives and their victims. If the case involved multiple victims, it would be categorized as "acquaintance group" if at least one of the victims was an acquaintance of the offender. As table 4 shows, about 37% of all murder cases were acquaintance murders, 24% were stranger murders. As for the motives, nearly half of them were related to anger and revenge; more than 20% were linked to money. 8% was due to their "unknown bad moods", where 6% felt an urge to kill because they had no hope in the future. Almost none of these murderers killed for thrills or because they wanted to take revenge against society.

Examining motives and the relationships to the offenders' victims, we found that only 5% of all murders were uniquely classified as "indiscriminate murders", 28% were for killing strangers with a cause, 37% were killings with known victims, and 30% were killings within domestic relationships (See Table 4). In other words, the majority of the observed murder situations were known to the victims. So-called indiscriminate murder was rather rare in Taiwan.

Table 4 murder categories (n=209)

| Variables | Items | % |
|--------------------------|--|------|
| Relationship to victim/s | Strangers | 23.9 |
| | Strangers, but offender knew names or nicknames of victims | 8.6 |
| | Acquaintance | 37.3 |
| | Domestic | 30.1 |
| Motives | Anger | 48.3 |
| | Money | 22.5 |
| | Domestic violence | 7.2 |
| | Sex/love | 14.8 |
| | Mood | 8.1 |
| | Wish to die | 1.9 |
| | Thrill, curiosity | 0 |
| | Live with no hope, no meaning | 6.2 |
| | Let society know about own unfair treatment | 2.9 |
| | Revenge against the society | 0.5 |
| Murder group | Indiscriminate | 4.8 |
| | Stranger with a cause | 27.8 |
| | Acquaintance | 37.3 |
| | Domestic | 30.1 |

The psychological and social characteristics of indiscriminate murderers

Personality traits

Table 5 indicates the nine personality traits designed by this research. Each trait contains a different number of questions. Our one-way ANOVA analyses indicated that six measures of anti-social personality, empathy, anger, loneliness, depression, and social anxiety are significantly different among the control group and four murder groups. However, self-esteem, violent attitude, and cynicism showed no differences from the control group.

We further examined the six personality traits and found that the indiscriminate murder group had higher anti-social scores than domestic murders, lower empathy than the control group, higher feelings of loneliness than stranger murders, but no difference in scores when it came to anger, depression and social anxiety compared to the other four groups.

Table 5 ANOVA and Post Hoc analysis tests for nine personality traits

| Traits | Items | p-value | Means+ | Post Hoc test |
|-------------------|-------|----------|-----------|---------------|
| Anti-social | 12 | .005*** | A>E>B>C>D | A>D, E>D |
| Self-esteem | 6 | .074 | A>D>E>B>C | |
| Empathy | 9 | .001*** | E>D>C>B>A | E>D, E>C, E>B |
| Violent attitudes | 23 | .084 | A>E>C>D>B | E>A, D>A, C>A |
| Cynicism | 8 | .227 | A>E>D>C>B | |
| Anger | 10 | <.001*** | E>A>B>C>D | E>B, E>C, E>D |
| Loneliness | 11 | .022* | A>E>D>C>B | A>B |
| Depression | 10 | <.001*** | E>A>D>C>B | E>D, E>C, E>B |
| Social anxiety | 11 | <.001*** | E>A>D>C>B | E>D, E>C, E>B |

+group A represents indiscriminate murder, Group B represents stranger murder with a cause, Group C is acquaintance murder, Group D is domestic murder, and Group E represents the control group.

Health, social relationship and other risk factors

Regarding other health and social risk factors, the analysis found that there are no significant differences of social alienation, psychiatric history, and employment rate among all the groups. However, the indiscriminate murder group were more likely to grow up in multiple high-risk families with a lack of intimate relationships and higher dropout rates than those in the control group. Another interesting finding is that all murderers share quite similar health and social risk factors. In other words, indiscriminate murderers are not unique in comparison with other murderers (See Table 6).

Table 6 Differences in health, social relationships, and other risk factors for the five groups

| Variables | Items | ANOVA p-value | Means++ | HSD Post Hoc tests |
|-------------------------------------|--------|-----------------------|-----------|------------------------|
| Intimate relationship | 11 | .004** | E>C>D>B>A | E>A ; E>B ; E>D |
| High risk family Social alienation+ | 9 | .021* | A>B>C>D>E | A>E |
| Depression screening+ | 7 | .054 | A>D>E>C>B | |
| Substance abuse+ | 6 | <.001*** | E>D>A>C>B | E>C>B ; D>C ; D>B ; |
| | 4 | <.001*** | A>B>C>D>E | D>E ; C>E ; B>E |
| | Yes/no | Chi Square p-value | % | |
| Psychiatric history | 1 | .086 | D>A>E>B>C | |
| Dropout | 1 | <.021* | E>D>C>B>A | E>C ; E>B ; E>A |
| Employment | 1 | <.642 | D>A>C>B>E | |
| Juvenile prior record | 1 | .01* | B>A>C>D | B>D |
| Adult prior record | 1 | .003* | B>A>C>D | B>D ; C>D |

+Robust and Games-Howell post hoc tests were used due to different variances, small and unequal group samples.

++group A represents indiscriminate murder, Group B is stranger murder with a cause, Group C is acquaintance murder, Group D is domestic murder, and Group E represents the control group.

Government policy analysis

To understand the current central and local government prevention policy towards indiscriminate murderers, we sent an official letter to 39 agencies and requested their policy documents (March 9, 2017). 7 of them never replied, 11 replied within 4-7 days, 4 within 19-27 days. The average response time was 11.2 days (7.2

days excluding holidays/weekends). The mode of response time was 13 days (9 days excluding holidays/weekends). 9 agencies replied after about two weeks.

The variable response time, arguably does not represent the agencies' work pressures, but is more related to the perceived sensitivity to the issue by individual agencies. In general, we found that police and prosecution offices were more concerned with this issue since they were the main government body responsible for the secondary prevention. On the other hand, the main government body of tertiary prevention seemed to be less sensitive and concerned about the policy. The Ministry of Labor Services, Ministry of Health and Welfare (i.e. departments of protective services, medical affairs, social and family affairs), the Hsin-Chu city government, the Victim Protection Association, the Chia-Yi police department never replied or attempted to explain their roles in this matter.

As for the primary prevention agencies, the Ministry of Education, for example, emphasized their role in family/marriage education as well their role in providing services to students with special needs. They intended to integrate multiple agencies to make it effective, however, they expressed their inability to provide services to all students with special personality disorder tendencies. They also warned that to conduct a primary screen to students of personality disorder tendency would have the potential to cause serious 'stigmatic' labeling. The Ministry of Health and Welfare shared a similar concern on the labeling effect in this regard.

The secondary prevention agencies, however, looked much more seriously on this issue. For example, the National Communications Commission pointed out that media coverage of this type of crime stories had seriously caused secondary harm to the victims and their families, and raised their concern about the possible crime imitation effects. The National Police Agency has conducted full reports on prevention measures, ranging from building up a local government monitoring system, and working with relevant NGOs, setting up emergency teams. The Ministry of Transportation and Communication has enhanced their CCTV surveillance security and their patrolling in public transportation systems and stations.

Most of the local governments were indifferent to both primary and secondary prevention. The exceptions were Kao-Hsiung, New Taipei and Taipei city governments. The Kao-Hsiung City government suggested a centralized social safety network, more services and monitoring of psychiatric patients with violent behaviors. Taipei city government has already set up their own social safety network by

integrating seven databases and services (i.e. social welfare, suicide prevention, labour, education, police, medical, and household offices). Their main executive and monitoring body is the social welfare office. The New Taipei city government has implemented a one-stop high risk family social safety network system. Apart from more patrolling on campuses and general public spaces by the police, the New Taipei city government has set up an office to provide in-take, classification, allocating resources and follow-up services. These three city governments have demonstrated how a local agency can better use their limited resources to work on prevention. The Tai-Chung city government nevertheless mentioned that to prevent indiscriminate murderers, especially those with a psychiatric history, such cases should not be regarded as the responsibility of social welfare. The government should, they suggested, focus more on crime prevention and judicial investigation to avoid widening the net of community monitoring and control. They maintained that indiscriminate murderers are almost impossible to predict at a community level.

For tertiary prevention, most of the District Prosecution offices replied that, in their experience, indiscriminate murderers seemed to have no or few prior criminal record. Their obligation is to prosecute crimes, not to prevent them. Community and social systems should have greater responsibility in that respect. Some prosecution offices had made some efforts to provide services to selected offenders. Ping-Tung, for example, spent more resources on sex offenders, Nan-Tou gave more public education to schools, and Miao-Li emphasized their services to offenders with a psychiatric history.

While the Corrections Department, the Probation Office and the Department of Mental and Oral Health should have been providing crucial treatment to indiscriminate murderers, their replies revealed their sense of powerlessness and helplessness regarding this matter. The Department of Mental and Oral Health noted that at the moment they had absolutely no counter-measures and legal means on offer to help people with anti-social personality disorders. They were also reluctant to offer any early mental health intervention to children and juveniles with personality disorder tendencies. Instead they advocated more resources to public health and education agencies. The After-care Rehabilitation Association expressed their difficulty in providing family support services to former offenders and specifically where those offenders had not proactively contacted their organization.

We have here reviewed the replies from different government agencies, starting with primary prevention, secondary prevention through to tertiary prevention. As

outlined above, among all agencies, the tertiary prevention agencies are the weakest and lack any sense of purpose on the matter. Furthermore, it appears to us that central and local governments lack appropriate collaboration, and there are also problems in collaboration among agencies at local government level. Existing policies are focused on secondary prevention, and aimed specifically towards an “exclusion” approach to psychiatric patients and offenders. Our policy analysis does indeed raise concerns about the adequacy of current policy development. Based on the empirical and policy analyses made above, we now turn to our recommendations.

Conclusions and Recommendations

The prevalence of indiscriminate murderers

Any estimate of the prevalence of indiscriminate murderers is likely to be a broad figure, given the very small number of known cases. Our investigation has shown that there was about 5% of all murder cases could be classified as of this type. The result is consistent with 周愷嫻’s estimation of 6% in 2016 (周愷嫻, 2016).

Stranger and indiscriminate murders contained approximately 30% of all the murders in the sample, showing similar ratios to that of England/Wales (2014-2015), and according to 侯崇文 (1999) and 周愷嫻’s (2016) research, a little higher than the ratio found in the USA.

The characteristics of indiscriminate murderers

We investigated whether indiscriminate murders are related to specific psychological, health and social risk factors. The occurrence of indiscriminate murders is significantly and positively related to low empathy compared to the control group. No differences have been shown according to dimensions of anti-social personality and loneliness. All murderers appeared to possess very similar personality traits (i.e in terms of self-esteem, violent attitudes, cynicism, anger, depression and social anxiety), except for indiscriminate murderers with higher anti-social personality, loneliness and lower empathy (see Figure 2).

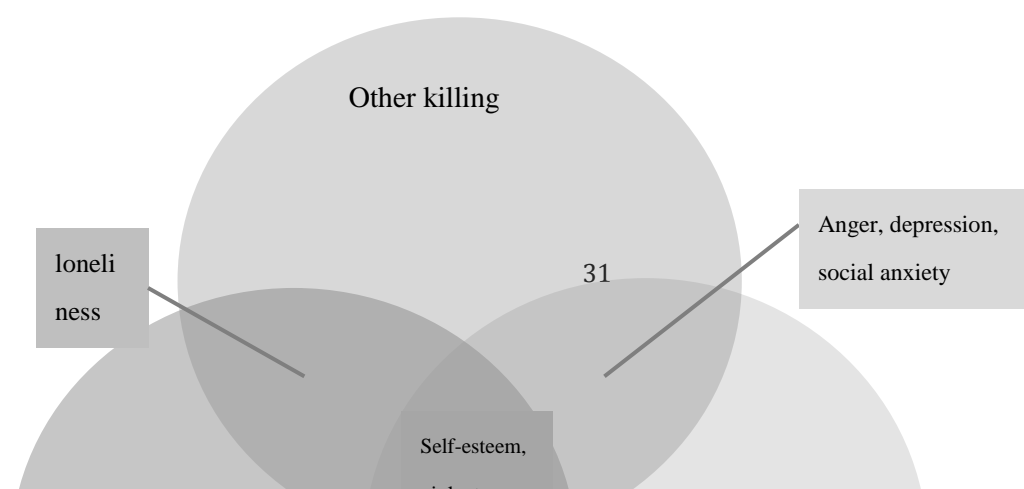


Figure 2 Personality traits among control, non-indiscriminate and indiscriminate murder groups.

As for the characteristics of substance use, health status and other social risk factors, we found that there are statistically significant differences for the indiscriminate murders with multiple high-risk family factors, fewer intimate relationships, and higher school dropout rates compared to the control group. However, surprisingly, no disparity was found in terms of depression, substance use and prior juvenile crime records between the two groups (See Figure 3). Figure 3 also demonstrates that there was no disparity in terms of social anxiety, mental illness, and employment history for all five groups. No other differences between indiscriminate murders and other murders emerge in our analysis. From our analysis, it would seem that all murderers share similar health and social risk factors such as fewer intimate relationships, more substance use, higher school dropout rates, and more of them growing up in high risk family situations and with a greater number of criminal convictions (See Figure 3).

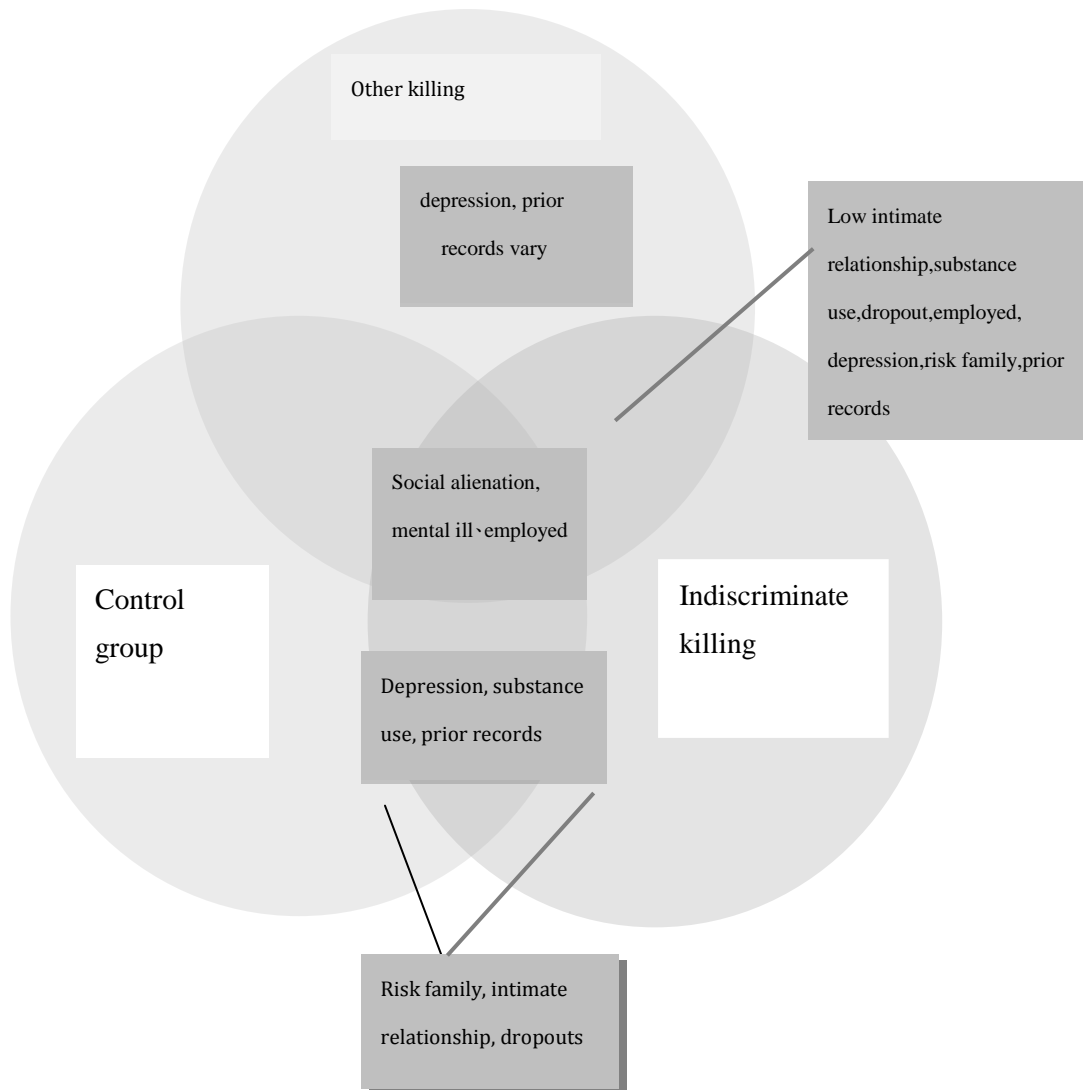


Figure 3 Health and social risk factors among control, non-indiscriminate and indiscriminate murder groups

In sum, the above comparisons are important because nothing speaks more convincingly than the results of empirical evidence. Unlike widely believed assumptions, our research evidence reveals that nothing distinguishes indiscriminate murderers from other murderers apart from their much lower levels of empathy. However, all murderers have similar life styles and life chances in terms of their upbringing, school, work, substance misuse and mental health history. This means that even though indiscriminate murderers might attract more media attention and have the potential to cause greater social panic, any cost-effective prevention policy should focus on murderers in general instead of seeking to distinguish and selectively target resources at any specific type of murder.

Policy recommendations

This study is unique in Taiwan not only by applying primary sources of as many as 209 murderers, but also by providing a detailed psychiatric analysis on the 15 individual cases under study. A thorough and detailed analysis of the relationship of various psychological, mental and social risk factors among 209 murders and a control group of 50 general public respondents provides an opportunity to understand how a few particular factors affect indiscriminate murders. Murders in general are a product of upbringing, school, work, psychological and mental conditions, as well as interpersonal relationships. The implications of our research for preventing indiscriminate killing are significant. First of all, our research findings suggest that one cannot prevent this particular form of murder without considering the entire context of murder. Checking the availability and accessibility of existing resources and inventory is a good and much easier path to prevent murders.

Integration of secondary and tertiary prevention systems

Our government often complains about no/little budget and staff to develop prevention policies and practices. Traditional preventive implications of indiscriminate and non-indiscriminate murders are arguably related more to primary prevention (i.e. public and school education stressing the importance of forming meaningful relationships, love and care for others, and the construction of a society based on mutual help and trust). Primary prevention, however, is effective only when resources are fully provided with a long term plan. Regrettably those are what the government can't promise. Thus, in our view, secondary and tertiary prevention systems for high risk individuals and families are more likely to be greater utility in cost-benefit terms. Central and local governments have more or less established some reporting and service systems, but unfortunately with no overall coordination. Our policy analysis in the previous section showed that local government in some cities has started to establish social safety networks by integrating existing high risk individual and family databases and treatment resources. Though resources allocated to high-risk individuals or families are often dealt with separately by different governmental sectors such as database and treatments/programs for sexual assault victims, domestic offenders and victims, drug addicted offenders, vulnerable children, school dropouts, homeless and/or psychiatric patients. To provide an optimal social safety preventive approach, integration of secondary and tertiary prevention programs is necessary. Of course, one cannot guarantee that it would show better preventive outcomes, but it would certainly contribute to less waste of administrative, medical, welfare and treatment resources. Our study thus suggests that an integrated secondary prevention and tertiary prevention network approach is key, and of higher priority than any primary prevention.

Multiple tiered system

A social safety network is better and more efficient at the local level than on a central level. The central government on the other hand should mainly be responsible for budget and audit, not for execution and practice. For local government, a multi-disciplinary team and high-rank team manager/s are recommended to be set up to respond with multi-dimensional agencies and professions/techniques for intervention and prevention of murders. This team is ideally designed to have three vertical tiers, namely: in-take/screening, assessment/diversion, and execution/follow-up. The team manager/s is/are responsible for multi-dimensional agencies meetings, case management and for overseeing the process of treatments and outcomes. By doing so, one should make sure that there is no waiting time or repeated treatments for persons-in-need or at risk, as well as ensuring no information gap between agencies. Horizontally, an *e-cloud* platform of uploading and sharing information about at-risk or in-need persons is also vital in order to reduce the knowledge gap between agencies, administrative meetings and labor. When established, a “big data” approach could eventually predict and provide better risk factor assessment and outcomes of various treatments to murders.

In other words, apart from sharing the e-high risk database, we recommend appointment of a high-rank social safety team manager/s to be in charge of supervising the entire process including in-take, classification, resources allocation and follow-up assessment.

Removal of legal and bureaucratic barriers

A multi-disciplinary team with a multi-tier social safety network cannot work without removing current legal and bureaucratic barriers. With no exceptions, all agencies dealing with at risk or in-need populations, for example domestic violence information centers, sexual assault information centers, drug addiction prevention centers, are bound by laws and regulations on personal data privacy - due to the highly sensitive and confidential personal/family information involved. These laws and regulations create legal barriers to multi-agency collaboration, and even provide reasons for failure to engage in multi-agency collaboration and information exchange.. The other issue preventing multi-disciplinary teamwork is that often public servants and agencies are overwhelmed by the problem of unequal allocation of resources. Some local governments have greater levels of resource for assessment and treatment than others. Some local governments with more at-risk cases than others are not fully

equipped with sufficient staff. These legal and resourcing obstacles can only be dealt with by establishing an information sharing legal framework which actively encourages collaborative working as well as providing appropriate resources within the system.

Judicial and administrative collaboration

Another difficulty for social safety teams is the lack of coordination and collaboration between judicial and administrative agencies. Theoretically, judicial systems (i.e. police, prosecution, court, correction, probation, and rehabilitation agencies) are independent of administrative agencies, and judicial information is strictly confidential in terms of sharing with the public and administrative agencies. A social safety team cannot be effective without appropriate bridging to the judicial sector. That is not to say that judicial systems should break the confidentiality protection of offenders or former offenders, but that it should provide better prison and community treatments/services to prevent the occurrence of future crimes/murders. The best current form of accountable liaison, in our view, would be via probation officers who have access to both legal and social welfare systems, and can gain trust from both these agencies. At the same time, a new teamwork model has to be created to facilitate two key players within this social safety network – namely, team managers and probation officers.

Hit rates

The study also tested an assumed integrated model which would have merged the existing six social safety databases in Taiwan (namely, the school dropout and recovery reporting systems established by the Ministry of Education since 1996, the high risk family reporting system established by the Ministry of Health and Welfare since 2012, the databases of prior juvenile and adult records, the national mental health database and the suicide reporting system) with our 15 individual cases. We found that the highest prediction hit rate would be in the adult prior record judicial system (0.73), followed by the national mental health record (0.60), the high risk family welfare reporting system (0.53), the school dropout reporting system (0.47) as well as the prior juvenile records (0.47) (See Table 7). Among the 15 cases, less than two percent were unaccounted for in the five social safety systems assuming that all systems work as they are designed. Less than one percent was missing if the national suicide reporting system is included. Thus one can conclude that in general such a multi-disciplinary and tier system, if it works effectively, can significantly

contribute to the successful “hit rate” of more than 98% of those persons identified as potential killers. While there is a high likelihood of any at risk or in-need individual being identified by the “network system”, it can never be fully effective without instituting good, immediate, and long-term support and treatment programs. Treating and supporting people who are psychologically, socially, economically, and mentally in need, is as important as identifying them. Strong programs could start with health and school systems so that children at a greater risk of turning into potential murderers (for example the abused, the dropouts, the outcasts, the suicidal, the loners, the bullied, and the bullies) will receive early help. It is also particularly important for all professionals to receive special training to assist with the identification and reporting of disaffected, detached, isolated individuals who need help in schools and communities.

Table 7 Estimated hit rates in various existing social safety network reporting systems (Total sample=15)

| Agency | Education | Health and Welfare | | Court | Justice | Health and Welfare | |
|--------------|----------------|--------------------------|-------------------------------|------------------------|---------------------|-----------------------|------------------|
| Risk factor | School dropout | Abused (prior to age 15) | Risk family (prior to age 15) | Juvenile prior records | Adult prior records | Mental health history | Suicide attem pt |
| cases | 7 | 2 | 8 | 7 | 11 | 9* | 6 |
| Hit rate | .47 | .13 | .53 | .47 | .73 | .60 | .40 |
| Missing rate | .53 | .87 | .47 | .53 | .27 | .40 | .60 |

*exclude diagnosis during court trials or/and in prisons.

Limitations of the Research

All studies have limitations. This one-year research project had five months to actually execute and complete the project; this was due to delays created by a three month IRB review and three months of administrative paperwork. It is important for us to remind the reader again to refrain from generalization of our findings and the difficult nature of the subject of our research.

The gap between legal and criminological typologies

The rare occurrence of indiscriminate murders has made the sample size used in this study extremely small. When sample size is too small, it will be difficult to find significant relationships based on the data, as statistical tests normally require a larger sample size to ensure a representative distribution of the population. The study used a sample framework of all incarcerated murder inmates in prisons, especially limited to the first-degree murderers. It is noted that some of these indiscriminate killers might be charged legally with attempted murders, second degree murders and/or defined as aggregate assaults. Future research can broaden the sample framework by including the above convictions which might legally not be directly related to indiscriminate murders, but indeed be very relevant in criminological terms.

Exclusion of high social profile cases

Noting that the public and government agencies might be more interested in understanding the high profile indiscriminate murder cases, this study deliberately excluded quite a few such cases. One of the reasons is that we found some of these cases were repeatedly reported by media and other researchers. The stories they told and will tell have possibly been contaminated. The other reason is that one of our team members, a forensic psychiatrist, was involved in the forensic psychiatric assessment of these cases.

Memory distortion issues

Interviews of 15 indiscriminate murderers in prison are difficult to conduct. Most of the interviewees have been incarcerated for at least seven years. Memories of the crime and the crime scenes we asked them to recall were highly challenging to remember and record, and possibly highly unreliable. We found that some of the stories they told us were very much in contrast to their court or/and prison records. It is highly unlikely that these inmates deliberately falsified their memories or lied to us. We want to underline that psychological research tells us that remembering is an unstable and profoundly unreliable process. Human beings remember, erase, and recreate memories all the time for various conscious and unconscious reasons and purposes. We recommend that for those convicted of such murders, that the justice officials organize a regular and multi-disciplinary professional team to conduct in-depth interviews and collect data at the point of conviction. Interviewing closer in time to the actual events, may provide more obviously reliable data.

Control group sampling bias

We found, after we collected the survey data, that our control group was biased in terms of their representation of the general population. Most of the respondents were young, college educated, and employed as students. This potential bias has inhibited our ability to conduct a thorough interpretation of the statistical findings. We regret not including more general and diverse types of respondents in the survey since this could have helped us understand the psychological, social and medical characteristics of these indiscriminate murderers. There is a need for future researchers to revisit the topic and to revise this bias in order to gather more accurate comparisons and more meaningful analyses of the problems in question.

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