Epidemiology of Child Abuse and Its Geographic Distribution in Hong Kong:
An Important Social Indicator of Different Districts and Communities
(A Central Policy Unit Commissioned Report)

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EXECUTIVE SUMMARY

Background and Aims

Child abuse is known to be a prevalent problem worldwide. Its relevant statistics have been considered as important social indicators in the United Kingdom (U.K.) and many western countries. Recent study in U.K. reported that the overall burden of child maltreatment remained stable and the annual incidence of hospital admissions declined significantly. The situation in Hong Kong (H.K.) was, however, rather different. A territory-wide household survey in 2004 reported a significant prevalence of child abuse and abuse related issues among H.K. families; the maltreatment related hospital admission was also increased from 33 per 100,000 in 2001 to 73 per 100,000 in 2008. Furthermore, districts with relatively low socio-economic status were found to have more prominent child abuse incidence. These findings coincided with the official statistics from Social Welfare Department (SWD), which reported the annual child maltreatment incidence increased by 87% from 2001 to 2010.

These phenomena all reflected a significant rise in child abuse and an unequal distribution of cases in H.K. where a thorough investigation is needed to delineate the underlying causes. In view of this, this study aims (1) to study the incidence, trend, and risk factors of child abuse related hospital admissions in H.K., (2) to study the correlation between child abuse cases managed in public hospitals and those reported in Child Protection Registry (CPR) of SWD, and (3) to study the epidemiology and geographical distribution of child abuse cases in Hospital Authority (HA) database and CPR of SWD by geo-mapping and to identify the differences among districts in H.K. and their correlation to relevant social indicators.

Methodology

The study involved two major child abuse databases in H.K.: (1) CPR under SWD and (2) Clinical Data Analysis and Reporting System (CDARS) and Accident and Emergency Information System (AEIS) under HA. To fully utilise the information available, records in the two databases were matched with due care and in confidence. After deleting all the personal identifiers, records of children (age < 19) hospital utilisations with child abuse related diagnostic codes during 1st January 2001 and 31st December 2010 were retrieved from CDARS and AEIS of HA while records of children being categorised as child abuse or at risk of abuse in multi-disciplinary case conferences on suspected child abuse (MDCC) in the same period were also extracted from the CPR under SWD.
Results

Summary of records in SWD and HA databases

Before matching, there were totally 5222 child abuse episodes (4840 individuals) from the CPR of SWD and 8071 child maltreatment related hospital utilisations (7548 individuals) from the HA. There were 58% of female in the SWD database and 53% of female in the HA database. The age of child abuse onset in HA was found to be significantly lower than that in SWD (p<0.0001) with a mean difference of 1 year old. Records in SWD database revealed that only one-third of the abusers had education attainment above F.3, while two-thirds of general population had the same education level. On the other hand, 66% of the abusers had a record of being abused in childhood, indicating child maltreatment could be recurrent and pass through generations.

After matching, totally 9364 child abuse victims were identified, in which 4524 only appeared in HA database (HA only group), 1816 in SWD (SWD only group), and 3024 in both databases (matched group). The unmatched records could be due to the lack of HKID card numbers for 900 cases in SWD database, some cases identified by HA doctors but not established as child abuse or at risk of abuse in MDCC, some cases established as child abuse, e.g. sexual abuse, were not admitted to public hospitals, and around 2000 cases in SWD database have been trashed after the children reaching the age of 18.

Records in the three data groups showed different characteristics. The matched group were found to have the lowest mean age of onset (6.5 years old) while the number for HA only and SWD only group were 8.9 and 9.8. The female-to-male ratio in the SWD only group was found significantly larger than the other two groups (p<0.0001). For types of abuse distribution, SWD only group had more sexual abuse cases (58%) than the matched group (13%) but had fewer physical abuse cases. This may reveal the case nature in the two databases were complimentary to each other.

Health profile of child abuse victims

HA accident and emergency (A&E) attendance and inpatient admission for all child abuse victims were retrieved. There was a significant increasing trend of the A&E attendance during the 10 years period. Health profile such as admission / attendance frequency, length of stay, and traumatic status were found different among the three groups.

The relationship between child abuse and four relevant health problems (suicidal attempt, injury, mental health problems, and congenital malformations / chromosomal abnormalities (CM/CA)) were investigated based on overseas and local clinical experiences. All of these four health problems were significantly more prevalent among abuse victims than in general population (p<0.0001). The difference
was found most serious in suicidal attempt – the odds for a person suffered from child abuse to attempt suicide were 97 times greater than a normal person.

The association between types of abuse and the four health problems were also found highly significant. For example, suicidal attempts were more commonly found in persons suffered from sexual and psychological abuse than from other abuses; mental health problems were frequently found in sexual, psychological, and multiple abuse victims; number of CM/CA diagnosis was especially prominent among children being neglected.

Geographical distribution and social indicators correlating to child abuse cases

Addresses for the child maltreatment victims were mapped on different geographical partitioning by using Geographical Information System (GIS). Among the 18 districts, Yuen Long was found to have most abuse cases while Central and Western district was found to have least cases during the study period. Key social indicators of the geographical clusters were extracted from 2006 Population By-census. Child abuse rate was positively associated with proportion of public rental housing and negatively correlated with median monthly income, median monthly household income, and proportion of working population as managers, administrators, professionals and associate professionals (abbreviated as occupation group A).

Similar analysis was conducted at Tertiary Planning Unit (TPU) level (totally 203 TPU in 2006) and Large Street Block Group (LSBG) level (totally 1639 LSBGs in 2006). The top three TPU with highest number of SWD abuse cases were in Yuen Long, Tuen Mun, and Wong Tai Sin respectively. Significant correlated social indicators at TPU levels were the same at district level, with the addition of proportion of residents aged above 65 in TPU. However, after adjusting for the inter-correlation among the social characteristics using a negative binomial regression, only the proportion of working population in occupation group A remained significant with a relative risk of 0.98. The reported relative risk means that if the proportion of working population in that occupation group was increased by 1%, the rate of child abuse in the TPU would be decreased by 2% on average, assuming all other factors unchanged. At LSBG level, the top 3 LSBGs with highest SWD child abuse cases were in Wan Chai, Yuen Long, and Tuen Mun respectively. However, it is worth to note that many cases clustered at Po Leung Kuk in Wan Chai and Children and Juvenile Home in Tuen Mun, which could be due to the fact that HA last known addresses were used in geo-mapping. This requires extra caution in interpretation. Logistic regression was used to model the child abuse occurrence in LSBGs with key social indicators. It was found that the proportion of working population in occupation group A was a potential protective factor for child abuse.
while the proportion of residents aged below 15 and the proportion of public rental housing in the LSBG were potential risk factors for child abuse occurrence. The results were generally consistent at the three geographical partitioning.

Implications and Conclusions

The present study demonstrated the practicality and usefulness in matching records from the two major child abuse databases in Hong Kong. The HA and SWD were found highly complementary in both data fields available and nature of case captured. Matching of the two databases provide a more comprehensive picture with both health information and socio-demographic profiles. This study also revealed the important relationship between health problems and child abuse. The higher prevalence in suicidal attempts calls for a close monitoring to child abuse victims, especially those suffering from sexual and psychological abuses; a child abuse surveillance system should be available to alert frontline hospital staff to better distinguish child abuse from injury. To tackle mental health problems among child abuse victims, case management from social and medical services needs to be enhanced for active follow-up of child abuse victims having mental health problems. Meanwhile, child carers should be more cautious to early identify child neglect among handicapped children with CM/CA.

GIS in the present study was able to demonstrate the distribution of child abuse case burden and to link the social indicators to child abuse cases, which assisted in identifying protective and risk factors in different geographical partitioning. Among the three types of partitioning system, proportion of working population in the positions of managers, administrators, professionals, or associate professionals was potentially protective towards child abuse. The proportion of public housing, on the other hand, was a potential risk factor to child abuse. The understanding of social indicators correlated to child abuse would be essential to advise the planning and implementation of preventive and remedial measures in different areas in H.K.. This understanding of child abuse geographical distribution will also shed the light on devising appropriate strategies in resources allocation and long-term policies.

Recommendations

First and foremost, the communication between SWD and HA could be enhanced to further improve child abuse related services and prevention planning. For example, a connection between the two databases could achieve better data capturing, monitoring, service planning and case management. Secondly, data capture system in CPR of SWD could be strengthened by recording valid HKID card number records as well as by keeping the child abuse cases even after they reach 18 years old. On the HA side, a built-in injury surveillance and alert system could assist in identifying child abuse victims earlier. Case diagnosed
with child abuse could also be linked up in the HA clinical management alert system in order to increase the awareness of health care professionals in managing at-risk children. In the service-planning dimension, geo-mapping of child abuse cases and identification of correlating factors could be conducted for better service planning and to guide allocation of valuable resources. In addition, there is a need to further improve the case management of child abuse victims by involving both social services and medical professionals to fulfil the needs of abused children, who suffer from mental health problems or at-risk in attempting suicide. Last but not least, future studies are also recommended to further investigate the underlying mechanism and impacts of child maltreatment.