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Unintentional Injury Burden in Hong Kong: Results from a Representative Population-Based Survey

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Abstract: Unintentional injuries are major causes of mortality and morbidity. Although generally perceived as accidents, it is possible to identify those at higher risk and implement appropriate prevention measures. This study aims to investigate the common causes of unintentional injuries and their associated risk factors among a large representative sample. Data of 12,022 individuals who completed the Hong Kong Population Health Survey 2014/15 were extracted. The primary outcome was the prevalence of having unintentional injury(-ies) in the previous 12 months that was severe enough to limit daily activities. Multivariable logistic regression analyses were conducted to identify associations between injuries and sociodemographic, clinical and lifestyle factors. 14.5% of respondents reported episode(s) of unintentional injury in the past 12 months in the population level. The main causes of top three most severe unintentional injuries were sprains (24.0%), falls (19.9%) and being hit/struck (19.6%). 13.2% injury episodes were work-related among the most severe episode. Factors independently associated with significantly higher risks of injury included currently employed, homemaker or student, born in Hong Kong (as compared with immigrants), doctor-diagnosed chronic conditions, harmful alcohol consumption, insufficient sleep, and disturbed sleep. To summarize, unintentional injuries are highly prevalent and associated with harmful drinking, insufficient sleep, and disturbed sleep, which are potential modifiable risk factors for prevention.

Keywords: unintentional injury; safety; public health; general population

1. Introduction

Injuries are a major public health problem [1]. It has been estimated that they result in five million deaths each year, accounting for 9% of all deaths worldwide [1]. Injuries are generally categorized and defined as either intentional or unintentional [2]. Intentional injuries are those where it is clear that an individual has purposely harmed themselves or others (e.g., suicide, domestic violence), whereas unintentional injuries can occur by mishap or negligence (e.g., road traffic accidents, drowning, burns, poisoning) [2]. In addition to making up around 75% of all injury-related deaths [1], unintentional injuries tend to be more common among younger and economically productive individuals, thereby resulting in 138 million disability-adjusted life years (DALYs) lost each year [2]. Indeed, those who have experienced an unintentional injury report both short and long-term health consequences that can result in impaired health-related quality of life (HRQoL) [3] and psychological morbidity [4,5] for both the victims and their families [6].
Although generally perceived as accidents, research has shown that unintentional injuries are not random events and that it is possible to implement effective prevention and control measures. The Haddon Matrix is a framework commonly applied to develop injury prevention interventions [7]. This matrix combines the epidemiologic triangle (host, agent, environment) with three levels of prevention [2,7]: (1) pre-injury (e.g., group exercise programs to reduce falls in older people [8], speed cameras to avoid road traffic accidents [9]); (2) injury (e.g., fire escape plan [10]); and (3) post-injury (e.g., first aid training [11]). However, in order to develop successful interventions for specific populations, it is important that epidemiological analyses are conducted to establish the prevalence, causes, and modifiable risk factors [12]. Indeed, such analyses should take place at regular intervals to enable tracking of injury rates and to evaluate the effectiveness of any interventions and control measures [12].

The current study reports on unintentional injury among a random stratified representative sample of the general population of Hong Kong, one of the world’s most densely populated regions. Since 1986, injuries have been among the five leading causes of mortality in Hong Kong [13] and accounted for 1848 deaths in 2019 alone [14]. A population-based descriptive study on injury in Hong Kong was conducted in 2008, which was more than a decade ago [15,16]. The most recent Global Burden of Diseases (GBD), Injuries and Risk Factors Study reported that, between 1990 and 2017, the age-standardized incidence of injuries (both unintentional and intentional) in Hong Kong increased by 58.5% (95% Uncertainty Interval (UI) 53.2% to 64.1%) [17]. Given the high and increasing prevalence of unintentional injuries in Hong Kong, the aims of the current study were to draw a comprehensive picture of the unintentional injuries burden among the general population by (1) determining the common causes, and (2) identifying the sociodemographic, clinical, and lifestyle factors associated with unintentional injuries.

2. Materials and Methods
2.1. Study Design and Setting
This study was a secondary analysis of data from the Hong Kong Population Health Survey 2014/15 (PHS 2014/15), a cross-sectional population-based study conducted by the Department of Health of the Government of Hong Kong Special Administrative Region (SAR) between December 2014 and October 2015. Systematic replicated sampling was applied to select a representative sample of the land-based non-institutional population (aged ≥15 years), excluding visitors and domestic helpers from outside Hong Kong [18]. In total, 7205 households were contacted and 5435 agreed to participate (household response rate: 75.4%). Among the recruited households, 12,022 individuals completed the face-to-face interviews, which consisted of a series of items covering sociodemographic information, health-related quality of life (HRQoL), health status, lifestyle, unintentional injury, preventive health practices, and healthcare utilization.

2.2. Outcomes and Predictor Variables
The primary outcome was self-reported unintentional injury in the past 12 months that was severe enough to limit daily activities. We also extracted data on the cause of each of the three most severe injuries (if applicable), the part(s) of the body that was injured in the most severe unintentional injury episode, the location where the most severe unintentional injury occurred, and whether the injury was work- or sport-related.

Predictor variables as potential risk factors of unintentional injury comprised sociodemographic information, clinical, and lifestyle factors. For sociodemographic variables, this included gender (male, female), age groups for different life stages (<35 years for young adults, 35–54 years for middle-aged people, 55–74 years for older adults, and 75 years or above for elderlies), employment status (employed in an office-based/managerial/administrative capacity, employed in a manual/physical work role, unemployed, retired, homemaker, and student), marital status (never married, married, divorced/separated, and widowed), immigrant background (born in Hong Kong, immigrants living in Hong Kong
for ≥seven years who are eligible for permanent residency, and immigrants living in Hong Kong for <seven years), educational background (no schooling/pre-primary, primary, secondary, and tertiary) and monthly household income. At the time of data collection, the Hong Kong median monthly household income was HK$24,500. Therefore, for the current analyses, income was categorized as follows: (1) <50% of the median, (2) ≥50% of the median to median, and (3) ≥the median.

Clinical variables assessed as potential risk factors were self-reported doctor-diagnosed chronic diseases (excluding mental health conditions) and doctor-diagnosed mental health conditions.

Finally, a number of lifestyle variables were included: (1) sleep hours (<six hours, six to eight hours, and ≥nine hours of sleep on average per day to represent insufficient, normal and long sleep hours [19,20]), (2) any sleep disturbance (difficulty initiating sleep, intermittent awakenings during the night, and/or early morning awakening) ≥three times per week, (3) physical activity level (sufficient level defined by performing at least 150 min moderate-intensity, at least 75 min vigorous-intensity physical exercise per week, or an equivalent combination of moderate- and vigorous-intensity physical activity achieving at least 600 MET-minutes, as recommended by the World Health Organization (WHO) [21]), (4) smoking status (never, current, and former), and (5) alcohol consumption (never, former, non-harmful current, and harmful current). Harmful alcohol consumption was defined as an Alcohol Use Disorders Identification Test (AUDIT) score of ≥8 [22].

2.3. Statistical Analysis

Descriptive statistics (e.g., number of respondents (N) and proportion (%)) were used to describe the characteristics of respondents. The significance of differences between groups (with unintentional injury, without unintentional injury) was assessed by non-parametric chi-square test. In addition to the results in sample level, weighting factors compiled by the Department of Health of the Government of Hong Kong SAR were applied to estimate the descriptive results in population level [18]. After applying the population weighting, the distribution of gender and age group is the same as the land-based non-institutional population of Hong Kong in the second quarter of 2015 [18].

Multivariable logistic regressions were used to assess the adjusted effect of socio-demographic, clinical, and lifestyle factors on the likelihood of reporting an unintentional injury in sample level. Following this, subgroup analyses on the association between work- or sport-related unintentional injury as the most severe injury episode and respondents’ factor were also assessed, adjusting for socio-demographic, clinical, and lifestyle factors. Interaction between sleep hours, any sleep disturbances, and alcohol consumption were also considered in the multivariable logistic regression. Yet, none of the interaction terms had a significant effect on likelihood of injury and they were dropped in the final logistic regression model. A small number of respondents (N = 64) were excluded from the multivariable logistic regression analyses because of missing data on household income (N = 36) or having invalid occupational status data as a result of receiving financial assistance from the government or being unable to work due to a long-term illness, disability, mental health problem, or occupational injury (N = 28). Multicollinearity between independent variables was assessed by variation inflation factors. As all variation inflation factors were <10, the effect of multicollinearity is said to be small.

Statistical analyses were performed using Stata version 13.0 (StataCorp LP, College Station, TX, USA). All tests of significance were two-tailed with a p-value of <0.05 considered to be statistically significant.

2.4. Ethical Approval

As this was a secondary analysis of open-source, anonymized government data, ethical approval from the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster was waived.
3. Results

3.1. Respondents

12,022 respondents were sampled in PHS 2014/15. After applying the population weighting, just over half were female (52.4%), those aged between 35 and 54 years formed the largest proportion among the age groups (36.3%) and the majority were employed (58.3%) (Table 1). For clinical factors, 39.1% reported a doctor-diagnosed chronic condition with the most common being hypertension (17.8%), high blood cholesterol (14.4%), and eye diseases (8.7%). It was also found that 1.6% reported a doctor-diagnosed mental health condition. For lifestyle, 12.7% had insufficient physical activity, 27.1% were current or ex-smokers of cigarettes, 58.0% were non-harmful current drinkers, 9.7% slept less than 6 h per day and 10.5% had sleep disturbances ≥ three times per week.

3.2. Prevalence and Risk Factors of Unintentional Injuries

The preceding 12-month prevalence of any unintentional injury that was severe enough to limit daily activities in Hong Kong population was 14.5%. Based on the sample level, respondents reporting an unintentional injury were more likely to be employed in an office-based/managerial/administrative capacity, single, born in Hong Kong (as compared to immigrants), educated to university level or above, have a doctor-diagnosed chronic condition, a mental health condition, insufficient physical activity, be a harmful current drinker, have less than six hours of sleep, and experience sleep disturbances (all \( p < 0.05 \)) (Table 1).

When the doctor-diagnosed chronic conditions were analyzed separately, those with an unintentional injury were more likely to have: stroke, respiratory disease, diseases of the ears/nose/throat, thyroid disease, kidney disease, liver, stomach and intestinal diseases, congenital blood diseases, musculoskeletal diseases, skin diseases, eye disease or hearing problem (all \( p < 0.05 \)). There were no statistically significant differences between groups in terms of gender, monthly household income, or smoking status (Table 1).

As shown in Table 2, the main causes of the top three most severe injuries were sprains (24.0%), falls (19.9%), being hit/struck (19.6%), cutting/piercing (15.8%), and sport (12.8%). Among the most severe injury episode, the majority of injuries were to the distal limbs: wrist/hand/finger (28.6%) followed by ankle/foot/toe (24.0%) and knee/lower leg (24.0%) (Table 3). Unintentional injuries most commonly occurred in the home (28.5%), followed by sport/athletics area (17.2%) and transport area (16.7%). 13.2% of injuries were work-related.
Table 1. Characteristics of study participants by whether or not they experienced an unintentional injury in the previous 12 months.

| Sample Level | Projected Population for the Second Quarter of 2015 \(^1\) |
|--------------|---------------------------------|
|              | Total (N = 12,022) | With Unintentional Injury (N = 1737, 14.4%) | Without Unintentional Injury (N = 10,285, 85.6%) | p-Value | Total (N = 6,080,200) | With Unintentional Injury (N = 879,557, 14.5%) | Without Unintentional Injury (N = 5,200,643, 85.5%) |
| N \(\%\)    | N \(\%\)            | N \(\%\)          | N \(\%\)       |        | N \(\%\)            | N \(\%\)          | N \(\%\)       |        |
| Gender       |                   |                   |                 |        |                   |                   |                 |        |
| Male         | 5665 47.1%        | 852 49.1%         | 4813 46.8%      | 0.082  | 2,895,200 47.6%   | 437,730 49.8%    | 2,457,470 47.3% |        |
| Female       | 6357 52.9%        | 885 51.0%         | 5472 53.2%      |        | 3,185,000 52.4%   | 441,827 50.2%    | 2,743,173 52.8% |        |
| Age group    |                   |                   |                 |        |                   |                   |                 |        |
| <35          | 3437 28.6%        | 578 33.3%         | 2859 27.8%      | <0.001 \(^*\) | 1,763,000 29.0%   | 295,338 33.6%    | 1,467,662 28.2% |        |
| 35–54        | 4261 35.4%        | 584 33.6%         | 3677 35.8%      |        | 2,204,200 36.3%   | 303,886 34.6%    | 1,900,314 36.5% |        |
| 55–74        | 3308 27.5%        | 428 24.6%         | 2880 28.0%      |        | 1,629,500 26.8%   | 210,231 23.9%    | 1,419,269 27.3% |        |
| 75 or above  | 1016 8.5%         | 147 8.5%          | 869 8.5%        |        | 483,500 8.0%      | 70,102 8.0%      | 413,398 8.0%   |        |
| Employment status |         |                   |                 |        |                   |                   |                 |        |
| Employed (office-based/managerial/administrative) | 4935 41.1% | 774 44.6% | 4161 40.5% | <0.001 \(^*\) | 2,610,058 42.9% | 409,366 46.5% | 2,200,692 42.3% |        |
| Employed (manual/physical work) | 1877 15.6% | 273 15.7% | 1604 15.6% |        | 935,067 15.4% | 135,884 15.5% | 799,183 15.4% |        |
| Unemployed   | 373 3.1%          | 47 2.7%           | 326 3.2%        |        | 188,505 3.1%      | 23,768 2.7%      | 164,737 3.2%   |        |
| Retired      | 2244 18.7%        | 275 15.8%         | 1969 19.1%      |        | 1,076,285 17.7%   | 132,084 15.0%    | 944,202 18.2%  |        |
| Homemaker    | 1623 13.5%        | 205 11.8%         | 1418 13.8%      |        | 800,980 13.2%     | 100,315 11.4%    | 700,665 13.5%  |        |
| Student      | 928 7.7%          | 158 9.1%          | 770 7.5%        |        | 448,590 7.4%      | 75,655 8.6%      | 372,935 7.2%   |        |
| Other        | 42 0.4%           | 5 0.3%            | 37 0.4%         |        | 20,714 0.3%       | 2,484 0.3%       | 18,229 0.4%    |        |
| Marital status |            |                   |                 |        |                   |                   |                 |        |
| Single       | 3575 29.7%        | 586 33.7%         | 2989 29.1%      | <0.001 \(^*\) | 1,810,369 29.8% | 296,301 33.7% | 1,514,068 29.1% |        |
| Married      | 7159 59.6%        | 952 54.8%         | 6207 60.4%      |        | 3,648,378 60.0%   | 487,539 55.4%    | 3,160,838 60.8% |        |
| Divorced/Separated | 528 4.4% | 82 4.7% | 446 4.3% |        | 256,233 4.2% | 38,707 4.4% | 217,526 4.2% |        |
| Widowed      | 760 6.3%          | 117 6.7%          | 643 6.3%        |        | 365,220 6.0%      | 57,010 6.5%      | 308,210 5.9%   |        |
| Immigrant background |         |                   |                 |        |                   |                   |                 |        |
| Born in Hong Kong | 7296 60.7% | 1134 65.3% | 6162 59.9% | <0.001 \(^*\) | 3,741,483 61.5% | 582,376 66.2% | 3,159,107 60.7% |        |
| Immigrant has lived in Hong Kong for 7 years or more | 4215 35.1% | 548 31.6% | 3667 35.7% |        | 2,056,389 33.8% | 267,740 30.4% | 1,788,649 34.4% |        |
| Immigrant has lived in Hong Kong for less than 7 years | 511 4.3% | 55 3.2% | 456 4.4% |        | 282,328 4.6% | 29,441 3.4% | 252,887 4.9% |        |
| Educational background |         |                   |                 |        |                   |                   |                 |        |
| No schooling/Pre-primary | 559 4.7% | 92 5.3% | 467 4.5% | <0.001 \(^*\) | 267,117 4.4% | 44,296 5.0% | 222,821 4.3% |        |
| Primary      | 1997 16.6%        | 264 15.2%         | 1733 16.9%      |        | 937,393 15.4%     | 123,876 14.1%    | 813,517 15.6%  |        |
| Secondary    | 6276 52.2%        | 854 49.2%         | 5422 52.7%      |        | 3,154,145 51.9%   | 426,853 48.5%    | 2,727,292 52.4% |        |
| University or above | 3190 26.5% | 827 30.3% | 2663 25.9% |        | 1,721,545 28.3% | 284,531 32.4% | 1,437,014 27.6% |        |
Table 1. Cont.

| Sample Level Projected Population for the Second Quarter of 2015 | Total (N = 12,022) | With Unintentional Injury (N = 1737, 14.4%) | Without Unintentional Injury (N = 10,285, 85.6%) | p-Value (N = 6,080,200) |
|-----------------|---------------------|-------------------------------------------|-----------------------------------------------|-------------------------|
| Monthly household income |         |                                           |                                               |                         |
| Below 12,250 HKD | N = 2250            | 18.7%                                      | 18.3%                                         | 1.079,607               |
| 12,250–24,499 HKD | N = 2959            | 24.6%                                      | 24.9%                                         | 1,453,202               |
| 24,500 or above HKD | N = 6777           | 56.4%                                      | 56.4%                                         | 3,529,926               |
| Unanswered      | N = 36             | 0.3%                                       | 0.4%                                          | 17,465                  |
| Doctor-diagnosed chronic conditions (excluding mental illness) |         |                                           |                                               |                         |
| Yes             | N = 4795           | 39.9%                                      | 46.1%                                         | 2,376,834               |
| No              | N = 7227           | 60.1%                                      | 53.9%                                         | 3,703,366               |
| Type of chronic condition (excluding mental illness) |         |                                           |                                               |                         |
| Cancer          | N = 188            | 1.6%                                       | 1.4%                                          | 90,409                  |
| Stroke          | N = 179            | 1.5%                                       | 2.1%                                          | 84,801                  |
| Respiratory disease | N = 207   | 2.6%                                       | 4.6%                                          | 152,170                 |
| Neurological disease | N = 26     | 0.2%                                       | 0.3%                                          | 12,151                  |
| Diseases of the ears/nose/throat | N = 268 | 2.2%                                       | 5.0%                                          | 133,237                 |
| Thyroid disease | N = 255            | 2.1%                                       | 2.9%                                          | 124,522                 |
| Kidney disease  | N = 81             | 0.7%                                       | 1.2%                                          | 39,327                  |
| Liver, stomach and intestinal diseases | N = 321 | 2.7%                                       | 4.4%                                          | 162,151                 |
| Congenital blood diseases | N = 211 | 1.8%                                       | 3.1%                                          | 105,302                 |
| Musculoskeletal diseases | N = 424 | 3.5%                                       | 5.4%                                          | 206,724                 |
| Immune diseases  | N = 62             | 0.5%                                       | 0.5%                                          | 30,065                  |
| Skin diseases   | N = 368            | 3.1%                                       | 5.5%                                          | 186,460                 |
| High blood cholesterol | N = 1748 | 14.5%                                      | 15.4%                                         | 873,170                 |
| Hypertension    | N = 2232           | 18.6%                                      | 18.7%                                         | 1,079,450               |
| Diabetes        | N = 694            | 5.8%                                       | 5.8%                                          | 48,456                  |
| Eye disease     | N = 1100           | 9.2%                                       | 11.7%                                         | 59,707                  |
| Hearing problem | N = 274            | 2.3%                                       | 3.6%                                          | 212,21                  |
Table 1. Cont.

| Sample Level Projected Population for the Second Quarter of 2015† |
|---------------------------------------------------------------|
| **Total** (N = 12,022) | **With Unintentional Injury** (N = 1737, 14.4%) | **Without Unintentional Injury** (N = 10,285, 85.6%) | **p-Value** |
| **Total** (N = 6,080,200) | **With Unintentional Injury** (N = 879,557, 14.5%) | **Without Unintentional Injury** (N = 5,200,643, 85.5%) |               |
| N | % | N | % | N | % | N | % | N | % |
|---|---|---|---|---|---|---|---|---|---|
| **Doctor-diagnosed mental health condition** | | | | | | | | | |
| Yes | 201 | 1.7% | 41 | 2.4% | 160 | 1.6% | 98,538 | 1.6% | 20,215 | 2.3% | 78,323 | 1.5% |
| No | 11,821 | 98.3% | 1696 | 97.6% | 10,125 | 98.4% | 5,981,662 | 98.4% | 859,342 | 97.7% | 5,122,320 | 98.5% |
| **Physical activity (sufficient as recommended by WHO)†** | | | | | | | | | |
| Sufficient | 10,480 | 87.2% | 1476 | 85.0% | 9004 | 87.5% | 5,305,260 | 87.3% | 749,814 | 85.2% | 4,555,446 | 87.6% |
| Insufficient | 1542 | 12.8% | 261 | 15.0% | 1281 | 12.5% | 774,940 | 12.7% | 129,743 | 14.8% | 645,197 | 12.4% |
| **Smoking status** | | | | | | | | | |
| Never smoker | 8761 | 72.9% | 1237 | 71.2% | 7524 | 73.2% | 4,431,769 | 72.9% | 625,699 | 71.1% | 3,806,069 | 73.2% |
| Former smoker | 1496 | 12.4% | 236 | 13.6% | 1260 | 12.3% | 748,128 | 12.3% | 118,066 | 13.4% | 630,062 | 12.1% |
| Current smoker | 1765 | 14.7% | 264 | 15.2% | 1501 | 14.6% | 900,303 | 14.8% | 135,791 | 15.4% | 764,512 | 14.7% |
| **Alcohol consumption** | | | | | | | | | |
| Never drinker | 2710 | 22.5% | 362 | 20.8% | 2348 | 22.8% | 1,327,721 | 21.8% | 178,152 | 20.3% | 1,149,568 | 22.1% |
| Former drinker | 2041 | 17.0% | 274 | 15.8% | 1767 | 17.2% | 1,016,816 | 16.7% | 135,344 | 15.4% | 881,472 | 17.0% |
| Non-harmful current drinker ‡ | 6859 | 57.1% | 1018 | 58.6% | 5841 | 56.8% | 3,523,179 | 58.0% | 522,801 | 59.4% | 3,000,377 | 57.7% |
| Harmful current drinker ‡ | 412 | 3.4% | 83 | 4.8% | 329 | 3.2% | 212,485 | 3.3% | 43,260 | 4.9% | 169,225 | 3.3% |
| **Sleep hours** | | | | | | | | | |
| <6 h | 1186 | 9.9% | 252 | 14.5% | 934 | 9.1% | 588,199 | 9.7% | 125,071 | 14.2% | 463,129 | 8.9% |
| 6–8 h | 10,109 | 84.1% | 1374 | 79.1% | 8735 | 84.9% | 5,133,690 | 84.4% | 699,990 | 79.6% | 4,433,700 | 85.3% |
| ≥9 h | 727 | 6.1% | 111 | 6.4% | 616 | 6.0% | 358,311 | 5.9% | 54,497 | 6.2% | 303,814 | 5.8% |
| **Any sleep disturbance §** | | | | | | | | | |
| Yes | 1289 | 10.7% | 303 | 17.4% | 986 | 9.6% | 640,132 | 10.5% | 149,708 | 17.0% | 490,425 | 9.4% |
| No | 10,733 | 89.3% | 1434 | 82.6% | 9299 | 90.4% | 5,440,068 | 89.5% | 729,449 | 83.0% | 4,710,219 | 90.6% |

Note: * Significant at 0.05 level by Chi-square test. † The estimates of physical activity level were different from the report in the Population Health Survey 2014/15, which only included respondents aged 18 or above for the calculation of physical activity level. ‡ Harmful drinking is defined as an Alcohol Use Disorders Identification Test (AUDIT) score ≥ 8. § Sleep disturbance includes having difficulty in falling asleep, maintaining sleep, and early morning awakenings. ¶ Population weighting allocated by age group and gender of survey respondents was applied to sample level to estimate the results with respect to the land-based non-institutional population of Hong Kong in the second quarter of 2015.
| Table 2. The main causes of the top three most severe unintentional injuries over the previous 12 months. |
|-------------------------------------------------------------------------------------------------|
| **Main Cause of Injury** | **Sample Level Top Three Most Severe Injury (N = 2745)** | **Sample Level Most Severe Injury (N = 1737)** | **Sample Level Second Most Severe Injury (N = 654)** | **Sample Level Third Most Severe Injury (N = 354)** | **Projected Population for the Second Quarter of 2015 ‡** | **Projected Population for the Second Quarter of 2015 ‡** | **Projected Population for the Second Quarter of 2015 ‡** | **Projected Population for the Second Quarter of 2015 ‡** |
| | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| Sprain | 656 | 23.9% | 463 | 26.7% | 140 | 21.4% | 53 | 15.0% | 334,754 | 24.0% | 235,974 | 26.8% | 71,163 | 21.4% | 27,618 | 15.2% |
| Falls | 559 | 20.4% | 422 | 24.3% | 96 | 14.7% | 41 | 11.6% | 277,685 | 19.9% | 208,931 | 23.8% | 47,933 | 14.4% | 20,821 | 11.5% |
| Being hit/struck | 542 | 19.7% | 303 | 17.4% | 154 | 23.6% | 85 | 24.0% | 272,480 | 19.6% | 152,108 | 17.3% | 77,577 | 23.3% | 42,794 | 23.6% |
| Cutting/piercing | 428 | 15.6% | 220 | 12.7% | 124 | 19.0% | 84 | 23.7% | 219,913 | 15.8% | 112,624 | 12.8% | 64,034 | 19.3% | 43,256 | 23.9% |
| Sport injuries | 343 | 12.5% | 199 | 11.5% | 93 | 14.2% | 51 | 14.4% | 178,651 | 12.8% | 103,994 | 11.8% | 48,065 | 14.5% | 26,592 | 14.7% |
| Burns/Scald | 116 | 4.2% | 70 | 4.0% | 26 | 4.0% | 20 | 5.7% | 57,941 | 4.2% | 34,906 | 4.0% | 13,022 | 3.9% | 10,012 | 5.5% |
| Pinch/Crush | 49 | 1.8% | 29 | 1.7% | 9 | 1.4% | 11 | 3.1% | 25,295 | 1.8% | 14,851 | 1.7% | 4831 | 1.5% | 5613 | 3.1% |
| Animal bite | 21 | 0.8% | 7 | 0.4% | 8 | 1.2% | 6 | 1.7% | 10,715 | 0.8% | 3675 | 0.4% | 3965 | 1.2% | 3075 | 1.7% |
| Traffic injuries | 20 | 0.7% | 18 | 1.0% | 1 | 0.2% | 1 | 0.3% | 10,687 | 0.8% | 9406 | 1.1% | 618 | 0.2% | 663 | 0.4% |
| Abrasion | 9 | 0.3% | 4 | 0.2% | 3 | 0.5% | 2 | 0.6% | 4260 | 0.3% | 1947 | 0.2% | 1418 | 0.4% | 895 | 0.5% |
| Rust of iron powder fall in eye | 1 | 0.0% | 1 | 0.1% | 0 | 0.0% | 0 | 0.0% | 570 | 0.0% | 570 | 0.1% | 0 | 0.0% | 0 | 0.0% |
| Unknown | 1 | 0.0% | 1 | 0.1% | 0 | 0.0% | 0 | 0.0% | 570 | 0.0% | 570 | 0.1% | 0 | 0.0% | 0 | 0.0% |

Table 3. Part of body injured, location of injury, and whether injury was work-related among the most severe injury episode.

| Table 3. Part of body(-ies) injured | **Sample Level All Cause (N = 1737)** | **Projected Population for the Second Quarter of 2015 ‡** |
|-------------------------------------|--------------------------------------|--------------------------------------|
| **Part of body(-ies) injured ‡** | **N** | **%** | **N** | **%** |
| Wrist, hand, finger | 495 | 28.5% | 251,905 | 28.6% |
| Ankle, foot, toe | 421 | 24.2% | 211,487 | 24.0% |
| Knee, lower leg | 418 | 24.1% | 211,340 | 24.0% |
| Lower back or lower spine (including waist) | 166 | 9.6% | 85,133 | 9.7% |
| Elbow, lower arm | 164 | 9.4% | 84,345 | 9.6% |
| Shoulder, upper arm | 101 | 5.8% | 51,978 | 5.9% |
| Head (other than eyes & face, but including ears) | 84 | 4.8% | 41,579 | 4.7% |

\[\text{† Population weighting allocated by age group and gender of survey respondents was applied to sample level to estimate the results with respect to the land-based non-institutional population of Hong Kong in the second quarter of 2015.}\]
Table 3. Cont.

| Location where injury was obtained                                      | Sample Level | Projected Population for the Second Quarter of 2015 ‡ |
|------------------------------------------------------------------------|--------------|------------------------------------------------------|
|                                                                        |  N (N = 1737) |  N (N = 879,557) |
| Thigh                                                                  | 57           | 28,683                                               |
| Neck                                                                   | 31           | 15,856                                               |
| Abdomen or pelvis (excluding back and spine)                          | 28           | 13,949                                               |
| Hip                                                                    | 24           | 11,812                                               |
| Face, including nose                                                  | 21           | 10,249                                               |
| Eye(s)                                                                 | 19           | 9874                                                 |
| Upper back or upper spine                                             | 18           | 8653                                                 |
| Chest (excluding back and spine)                                       | 15           | 7719                                                 |
| Tooth (teeth)                                                         | 7            | 3424                                                 |
| Multiple parts                                                        | 1            | 596                                                  |
| Location where injury was obtained                                     | 504          | 250,847                                              |
| Sport or athletics area                                               | 289          | 151,160                                              |
| Transport area: public highway, street or road                        | 289          | 147,153                                              |
| Commercial area (non-recreational, e.g., offices)                      | 186          | 95,177                                               |
| Recreational area, cultural area or public building (e.g., shopping   | 139          | 69,749                                               |
| mall, restaurant, park, club house)                                    |              |                                                       |
| Industrial or construction area                                        | 107          | 52,631                                               |
| School, educational area                                              | 63           | 31,209                                               |
| Countryside                                                           | 55           | 27,782                                               |
| Unspecified place of occurrence                                       | 48           | 24,939                                               |
| Transport area: others (e.g., bus terminal, MTR station, car park)    | 41           | 21,088                                               |
| Medical service area                                                  | 12           | 5904                                                 |
| Residential institution                                               | 3            | 1402                                                 |
| Farm or other place of primary production (e.g., livestock farming,    | 1            | 515                                                  |
| fishery)                                                              |              |                                                       |
| Work-related injury                                                   |              |                                                       |
| Yes                                                                    | 229          | 116,059                                              |
| No                                                                     | 1508         | 763,498                                              |

Note: † Multiple answers were allowed. ‡ Population weighting allocated by age group and gender of survey respondents was applied to sample level to estimate the results with respect to the land-based non-institutional population of Hong Kong in the second quarter of 2015.
The results of the multivariable analysis in sample level, where each variable is adjusted for all other variables included in the model, are presented in Table 4. For socio-demographics, respondents who were employed (as both office-based and physical work), a homemaker, or student had significantly higher odds of unintentional injury (OR 1.61 \( p < 0.001 \), 1.56 \( p < 0.001 \), 1.30 \( p = 0.030 \), and 1.72 \( p = 0.001 \), respectively), than retirees. Those born in Hong Kong had a 49% higher chance of injury than immigrants living in Hong Kong for < seven years (OR 1.49, \( p = 0.007 \). When compared to those with secondary level education, respondents with no schooling/pre-primary or tertiary education had significantly higher odds of reporting an injury (no schooling/pre-primary: OR 1.38 \( p = 0.029 \), tertiary: OR 1.17 \( p = 0.021 \)).

Respondents with the following doctor-diagnosed chronic diseases had increased odds of reporting an injury than those without such conditions: respiratory diseases (OR 1.63, \( p < 0.001 \)); diseases of the ears, nose or throat (OR 2.20, \( p < 0.001 \)); liver, stomach and intestinal diseases (OR 1.59, \( p = 0.001 \)); congenital blood diseases (OR 1.58, \( p = 0.007 \)); musculoskeletal diseases (OR 1.31, \( p = 0.040 \)); skin diseases (OR 1.51, \( p = 0.001 \)); eye diseases (OR 1.43, \( p < 0.001 \)); and hearing problems (OR 1.41, \( p = 0.037 \)).

In terms of lifestyle, it was found that respondents who reported harmful alcohol consumption had greater odds of injury than those who reported never drinking alcohol (OR 1.52, \( p = 0.005 \)). Respondents who reported a sleep disturbance \( \geq 3 \) times a week had a 68% increase in the odds of injury than those who did not report sleep disturbances (OR 1.68, \( p < 0.001 \)). Finally, respondents with <6 h of sleep per day had a 38% increase in the odds of an unintentional injury than respondents with 6 to 8 h of sleep (OR 1.38, \( p < 0.001 \)). Interaction between sleep hours, any sleep disturbances and alcohol consumption were insignificant to the likelihood of unintentional injury, and therefore were not included in the final logistic regression model. The results of interaction between sleep and alcohol consumption are displayed in Supplementary Table S1.

### Table 4. Factors associated with unintentional injury by multivariable logistic regression analysis.

| Employment status (adults)                                                                 | Odds Ratio  | 95% CI     | \( p \)-Value |
|------------------------------------------------------------------------------------------|-------------|------------|---------------|
| Employed (office-based/managerial/administrative)                                       | 1.608       | (1.276,2.026) | <0.001 *      |
| Employed (manual/physical work)                                                          | 1.563       | (1.235,1.976) | <0.001 *      |
| Unemployed                                                                                | 1.119       | (0.769,1.628) | 0.558         |
| Retired                                     | Ref         |             |               |
| Homemaker                                  | 1.299       | (1.026,1.643) | 0.030 *       |
| Student                                    | 1.716       | (1.265,2.329) | 0.001 *       |

| Immigrant background                                                                     | Odds Ratio  | 95% CI     | \( p \)-Value |
|------------------------------------------------------------------------------------------|-------------|------------|---------------|
| Born in Hong Kong                                                                         | 1.495       | (1.114,2.005) | 0.007 *      |
| Immigrant, has lived in Hong Kong for 7 years or more                                    | 1.294       | (0.954,1.755) | 0.098         |
| Immigrant, has lived in Hong Kong for less than 7 years                                   | Ref         |             |               |

| Educational background                                                                   | Odds Ratio  | 95% CI     | \( p \)-Value |
|------------------------------------------------------------------------------------------|-------------|------------|---------------|
| No schooling/Pre-primary                                                                 | 1.383       | (1.034,1.851) | 0.029 *      |
| Primary                                                                   | 1.049       | (0.882,1.247) | 0.588         |
| Secondary                                                                                 | Ref         |             |               |
| Tertiary                                                                                 | 1.175       | (1.024,1.347) | 0.021 *      |

| Doctor-diagnosed chronic conditions (No conditions as Ref)                               | Odds Ratio  | 95% CI     | \( p \)-Value |
|------------------------------------------------------------------------------------------|-------------|------------|---------------|
| Respiratory disease                                                                      | 1.629       | (1.239,2.143) | <0.001 *      |
| Diseases of the ears/nose/throat                                                         | 2.200       | (1.667,2.902) | <0.001 *      |
| Liver, stomach and intestinal diseases                                                   | 1.592       | (1.205,2.104) | 0.001 *      |
| Congenital blood diseases                                                                | 1.582       | (1.135,2.205) | 0.007 *      |
| Musculoskeletal diseases                                                                 | 1.314       | (1.013,1.704) | 0.040 *      |
| Skin diseases                                                                            | 1.513       | (1.173,1.951) | 0.001 *      |
| Eye disease                                                                              | 1.426       | (1.171,1.736) | <0.001 *      |
| Hearing problem                                                                          | 1.406       | (1.020,1.938) | 0.037 *      |
Table 4. Cont.

| Likelihood of Having Unintentional Injury | Odds Ratio | 95% CI       | p-Value |
|-----------------------------------------|------------|--------------|---------|
| Alcohol consumption                     |            |              |         |
| Never                                   | Ref        |              |         |
| Ex                                      | 1.045      | (0.876, 1.247)| 0.624   |
| Non-harmful current †                   | 1.106      | (0.959, 1.276)| 0.167   |
| Harmful current †                       | 1.516      | (1.136, 2.023)| 0.005 * |
| Sleep disturbance ‡                     |            |              |         |
| No                                      | Ref        |              |         |
| Yes                                     | 1.682      | (1.436, 1.969)| <0.001 *|
| Sleep hour                              |            |              |         |
| <6 h                                    | 1.383      | (1.173, 1.631)| <0.001 *|
| 6–8 h                                   | Ref        |              |         |
| ≥9 h                                    | 1.130      | (0.907, 1.406)| 0.276   |

The results were adjusted for sex, age group, marital status, monthly household income, doctor-diagnosed cancer, stroke, coronary heart diseases, neurological diseases, thyroid disease, kidney diseases, immune diseases, high blood cholesterol, hypertension, diabetes, mental health condition, physical activity level and smoking status, which are insignificant to the likelihood of having an episode of unintentional injury. Notes: * Significant at 0.05 level by multivariable logistic regression, if appropriate. † Harmful drinking is defined as an Alcohol Use Disorders Identification Test (AUDIT) score ≥8. ‡ Sleep disturbance includes having difficulty in falling asleep, maintaining sleep, and early morning awakenings.

Table 5 shows the results of the subgroup analysis where the adjusted effect of sociodemographic characteristics and lifestyle factors on likelihood of sustaining a work-related or sport-related unintentional injury was explored. The following factors were significantly associated with higher odds of reporting a work-related injury: employed (manual/physical work) (OR 2.51, p < 0.001), born in Hong Kong (OR 2.25, p < 0.001), immigrant in Hong Kong for ≥7 years (OR 3.43, p = 0.010), primary (OR 2.40, p = 0.019) or secondary education (OR 2.37, p < 0.001), sufficient physical activity level (OR 3.02, p = 0.001) and never smoker (OR 2.24, p = 0.005).

A number of factors were significantly associated with increased odds of having a sport-related injury: male gender (OR 3.19, p < 0.001), younger age (<35 [OR 2.76, p = 0.018] or 35–54 [OR 2.47, p = 0.016] years), employed (office-based/managerial/administrative) (OR 3.17, p = 0.001) or student (OR 8.26, p < 0.001), insufficient physical activity level (OR 2.74, p = 0.006), never (OR 2.33, p = 0.007) and former smoker (OR 2.41, p = 0.015), and harmful current drinker (OR 2.37, p = 0.038).
Table 5. Multivariable logistic regression analysis of factors associated with work-related and sport-related unintentional injury as the most severe unintentional injury episode.

|                                      | Likelihood of Work-Related Injury | Likelihood of Sport-Related Injury |
|--------------------------------------|----------------------------------|-----------------------------------|
|                                      | Odds Ratio 95% CI  p-Value        | Odds Ratio 95% CI  p-Value        |
| Gender                               |                                  |                                  |
| Male                                 | 3.192 (2.176,4.684) <0.001 *     |                                  |
| Female                               | Ref                              |                                  |
| Age group                            |                                  |                                  |
| <35                                  | 2.758 (1.189,6.397) 0.018*       |                                  |
| 35–54                                | 2.468 (1.186,5.136) 0.016*       |                                  |
| 55–74                                | Ref                              |                                  |
| Employment status (adults)           |                                  |                                  |
| Employed (office-based/managerial/administrative) | Ref                    |                                  |
| Employed (manual/physical work)      | 2.511 (1.677,3.759) <0.001 *     | 3.171 (1.580,6.364) 0.001 *       |
| Unemployed                           |                                  |                                  |
| Retired                              | 1.079 (0.261,4.454) 0.917        |                                  |
| Homemaker                           | 1.775 (0.554,5.687) 0.334        |                                  |
| Student                              | 8.259 (3.760,18.144) <0.001 *    |                                  |
| Immigrant background                 |                                  |                                  |
| Born in Hong Kong                    | 2.247 (1.536,3.287) <0.001 *     |                                  |
| Immigrant, has lived in Hong Kong for 7 years or more | 3.433 (1.339,8.799) 0.010 * |                                  |
| Immigrant, has lived in Hong Kong for less than 7 years | Ref |                                  |
| Educational background               |                                  |                                  |
| No schooling/Pre-primary             | (No observation)                 |                                  |
| Primary                              | 2.396 (1.154,4.972) 0.019 *      |                                  |
| Secondary                            | 2.366 (1.502,3.726) <0.001 *     |                                  |
| Tertiary                             | Ref                              |                                  |
| Physical activity (sufficient as recommended by WHO) |                                  |                                  |
| Yes                                  | 3.019 (1.572,5.799) 0.001 *      | Ref                              |
| No                                   | Ref                              | 2.735 (1.328,5.633) 0.006 *      |
| Smoking status                       |                                  |                                  |
| Never smoker                         | 2.239 (1.275,3.933) 0.005 *      | 2.326 (1.254,4.312) 0.007 *      |
| Current smoker                       | 1.148 (0.675,1.953) 0.611        | Ref                              |
| Former smoker                        | Ref                              | 2.408 (1.184,4.896) 0.015 *      |
| Alcohol consumption                  |                                  |                                  |
| Never drinker                        |                                  |                                  |
| Former drinker                       |                                  |                                  |
| Non-harmful current drinker †        | 1.371 (0.692,2.718) 0.366        |                                  |
| Harmful current drinker ‡            | 1.417 (0.839,2.392) 0.192        |                                  |
|                                      | 2.373 (1.050,5.362) 0.038 *      |                                  |

The results were adjusted for marital status, monthly household income, doctor-diagnosed chronic conditions, doctor-diagnosed mental health condition, sleep disturbance and sleep hour, which are insignificant to the likelihood of having an episode of work-related or sport-related unintentional injury. Notes: * Significant at 0.05 level by multivariable logistic regression, if appropriate. † Harmful drinking is defined as an Alcohol Use Disorders Identification Test (AUDIT) score ≥ 8.
4. Discussion

The preceding 12-month prevalence of any unintentional injury that was severe enough to limit daily activities was 14.5%. Based on the estimate of the population at the second quarter of 2015, this corresponds to 879,600 individuals aged ≥15 years. This finding is concerning, as it represents a significant increase from the 12-month prevalence of unintentional injuries reported in the 2008 population-based injury survey (6.2%) (representing 415,200 individuals), despite selected age sampling were difference in the two surveys [15,16]. This trend is also in line with the recent GBD, Injuries and Risk Factors Study where, between 1990 and 2017, an increase in the age-standardized incidence rates of unintentional injuries and transport injuries was found across the 31 provinces in Mainland China, Hong Kong SAR, Macao SAR, and Taiwan (unintentional injuries: 55.5% increase (95% uncertainty interval [UI] 50.7% to 60.3%), transport injuries: 82.2% increase (95% UI 73.7% to 89.9%) [17] with a 58.5% increase in all injuries found in Hong Kong (95% UI 53.2% to 64.1%)) [17]. The years lived with disability (YLD) due to injury also rose in Hong Kong by 53.1% (95% UI 48.5% to 57.3%). These findings are troubling, especially given that the global age-standardized incidence for all injuries had declined by 0.9% between 1990 and 2017 (95% UI −2.3% to 0.6%) [23]. However, it is important to note that Hong Kong is a densely populated metropolitan region with a hilly landscape, crowded streets, heavy traffic, and small square footage of living space per person, all of which raise the risk of injuries. It should also be noted that age-standardized disability-adjusted life years (DALY) and mortality rates related to injury over the same period decreased in Hong Kong by 17.7% (95% UI −27.8% to −6.8%) and 36.9% (95% UI −47.4% to −24.8%), respectively [17]. Taken together, these results suggest that post-injury intervention (e.g., first aid, healthcare) has greatly improved, however, pre-injury and injury prevention should continue to be a priority for Hong Kong.

4.1. Type and Causes of Unintentional Injuries

More than one-tenth of unintentional injuries were work-related (13.2%), with the main causes being sprains, falls, and being hit/struck. As a small geographical region with a large and growing population, there is increasing renovation and construction of buildings (especially high-rise buildings) to accommodate residents, workplaces, and facilities in Hong Kong. A recently published study investigated trends of construction occupational accidents in Hong Kong [24]. It was found that the proportion of construction workers had increased by 89.5% between 2011 (n = 62,635) and 2017 (n = 118,674). Although injury incidence rates declined from 5.1 per 62,635 workers in 2011 to 3.5 per 118,674 workers in 2017, there was a corresponding increase in the proportion of injuries reported (28%) with ‘slip, trip or fall on same level’ being the most common cause of injury [24]. Furthermore, using a computer and sitting in a static posture for long periods of time raises the risk of suffering a repetitive strain finger and wrist injury (RSI). It has been reported that RSIs are common occupational health problems in Hong Kong [25]. This is not surprising given that a large number of workers use computers and work for long hours at a mean of 42 h per week, which is above the global average [26]. In term of compensation, it is less likely for an employee in Hong Kong to intentionally injure himself/herself in order to claim compensation. According to the Employees’ Compensation Ordinance, all cases should be reported to the Labour Department of the Government of Hong Kong SAR within 14 days from the occurrence [27]. The severity of the injury is assessed by a registered medical practitioner with clinical judgement and sick leave granted to the employee if necessary. The employer is then required to pay for the compensation, which is up to 80% of the income loss of the employee during the period of incapacity up to 24 months afterwards. This allows the employee to receive medical treatment and rehabilitation. In this case, there is no extra benefit for an employee to have an injury, suggesting that the injuries identified in our analysis were most likely unintentional.
Finally, it is important to note that 19.9% of unintentional injuries were caused by falls, which reflects an aging population [28] and deserves more public health attention as falls have high morbidity and mortality in elderly people.

4.2. Risk Factors for Unintentional Injuries

For sociodemographic factors, respondents who were employed, a homemaker, or a student were significantly more likely to report an injury than retirees. As stated above, those employed could be at higher risk due to long hours using computers or construction accidents. Homemakers are undertaking potentially hazardous activities, including care of children and elderly people and household maintenance duties (e.g., cooking, cleaning) and students could be at higher risk due to sport participation [29] or spending long hours at their computer doing course work. Those born in Hong Kong were more likely to report an injury than those living in Hong Kong for less than seven years but further research is required to confirm this. It was also found that no schooling/pre-primary education and tertiary education were significantly associated with higher odds of injury. A potential explanation is that those with a lower education level are more likely to be employed in positions that carry a higher risk of work-related injury, such as factory work, hospitality, and construction. On the other hand, those with tertiary education may be more likely to have injuries related to computer work or participation in sport.

A number of doctor-diagnosed chronic conditions were found to be positively associated with unintentional injuries (e.g., diseases of the ears/nose/throat, musculoskeletal conditions). It is likely that symptoms caused by such conditions (e.g., fatigue, postural hypotension, muscle weakness, sensory impairment), their impact on physical fitness, and the side effects from medications (e.g., drowsiness, dizziness, hypoglycemia) could all increase the risk of injury. It is important that patients with these conditions are specifically counselled on their increased risk of injury and advised on preventive measures.

In terms of lifestyle factors, any reported sleep disturbance ≥ three times per week was the lifestyle variable most strongly associated with unintentional injury. Insufficient sleep was also found to be significantly associated with injury. This finding is consistent with the results of previous studies [30–33], with one systematic review and meta-analysis reporting that 13% of occupational injuries were explained by sleep issues alone [31]. Indeed, sleep is an essential physiological function and sleep problems can result in reduced attention span and concentration, as well as daytime drowsiness, all of which increase the likelihood of errors and injuries. Hong Kong is known as a sleep-deprived region and our results showed that sleep problems are common with 9.9% of respondents reporting insufficient sleep and 10.7% reporting sleep disturbances ≥ three times per week (Table 1). However, public health promotion of sufficient and good quality sleep is relatively lacking when compared with promotion of physical activity and healthy eating. It was also found that harmful current drinking was significantly associated with an increased risk of injury, including sport-related injury. Indeed, previous research has identified strong associations between alcohol consumption and injury due to the impairments caused by intoxication (e.g., loss of co-ordination, drowsiness) [34].

4.3. Strengths and Limitations

The data included in this study are from a large replicative sample of the general population, and quality control was rigorous, which increases generalizability. We were able to identify specific high-risk groups and a range of potentially modifiable clinical and lifestyle risk factors.

However, our results have some limitations. First, the study was cross-sectional, which carries the possibility of reverse causation. In addition, injuries were self-reported and their severity could have been underestimated or overestimated depending on the respondent’s self-assessment. Moreover, fatal unintentional injuries were not captured. It is also important to note that domestic helpers comprise around 5% of the local population and undertake caring and housekeeping duties, which could put them at higher risk
of injury. It is possible that their exclusion from the PHS 2014/15 could lead to the underestimation of the overall injury prevalence rate for Hong Kong. Lastly, the use of drugs among respondents was not captured in PHS 2014/15, so we were unable to explore associations between drug use and injury.

4.4. Implications for Future Research

Future studies should apply prospective methodologies to identify causal associations and examine potential interactions among risk factors. Further research should also seek to develop and test injury prevention interventions. Digital interventions (e.g., virtual-reality programs, video demonstrations) may have the greatest potential since they can be made widely available and accessed at any time. Indeed, two recently published reviews reported that digital interventions are effective at reducing unintentional injury rates [35,36]. Such interventions may also be more appealing to young adults who are a high-risk group for injuries.

4.5. Public Health and Clinical Implications

Tailored public health campaigns should be delivered to raise awareness of injury prevention strategies among high-risk groups. For example, tips to prevent computer-related RSIs in workplaces such as including regular breaks, adopting good posture, and exercising/stretching frequently. Educational interventions and campaigns should also continue to target modifiable risk factors, such as attention to the quantity and quality of sleep, and abstinence from harmful alcohol consumption. It is important that injury prevention is included within all strategies for health and wellbeing. In terms of clinical implications, healthcare professionals have a key role to play in unintentional injury prevention. For example, anticipatory advice to patients with chronic diseases regarding the appropriate precautions to take, as well as general home safety advice including appropriate precautions if working at a great height, or otherwise tips like ensuring adequate lighting, removing loose rugs, and installing handrails for toilets and the bath/shower.

5. Conclusions

Unintentional injuries are highly prevalent in Hong Kong’s population. The majority of injuries were work-related and caused by sprains, falls, and being hit/struck. Insufficient and poor quality sleep, and harmful drinking are potential modifiable risk factors for pre-injury prevention. It was especially concerning to find that the prevalence of injuries in Hong Kong has increased over time, which is in line with the trend in prevalence rates across Mainland China, Macao SAR, and Taiwan. There is therefore a pressing need to raise public awareness of unintentional injuries and to develop effective interventions targeting the most common causes of injuries and high-risk groups.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/ijerph18168826/s1, Table S1: STROBE statement for cross-sectional studies.

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