A HOLISTIC APPROACH ON FALL PREVENTION AND PROTECTION IN HONG KONG

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Fall of person from height continues to be one of the leading causes of work-related injury and deaths among all occupations in Hong Kong, especially construction industry. As the major organization with statutory responsibilities in Hong Kong, the Hong Kong Occupational Safety and Health Council (OSHC) has made enormous efforts to protect the safety and health of the working population. OSHC has adopted a holistic approach to promote fall prevention and protection in the workplace, which involves scientific research, partnership with industries, promotional campaigns and education and training. By adopted this holistic approach, the number of fall of person from height accident decreased significantly in recent 15 years.

Introduction

In Hong Kong, fall of person from height continues to be one of the leading causes of work-related injury and deaths among all occupations in recent years. According to the accident statistics by the Hong Kong Labour Department, construction industry was the major industry that contributed to the accidents. As the major organization with statutory responsibilities, the Hong Kong Occupational Safety and Health Council (OSHC) has made enormous efforts to protect the safety and health of the working population. In order to prevent fall from height accidents, OSHC has adopted a holistic approach, as the major strategies to protect those workers need to work at height in Hong Kong.

Strategies on promoting fall prevention and protection – a holistic approach

The holistic approach for promoting fall prevention and protection includes four aspects – scientific research, partnership with industries, promotional campaigns and education and training (Figure 1). Each aspect in the holistic approach is related with the other aspects, in order to create an all-round and effective influence for fall prevention and protection.

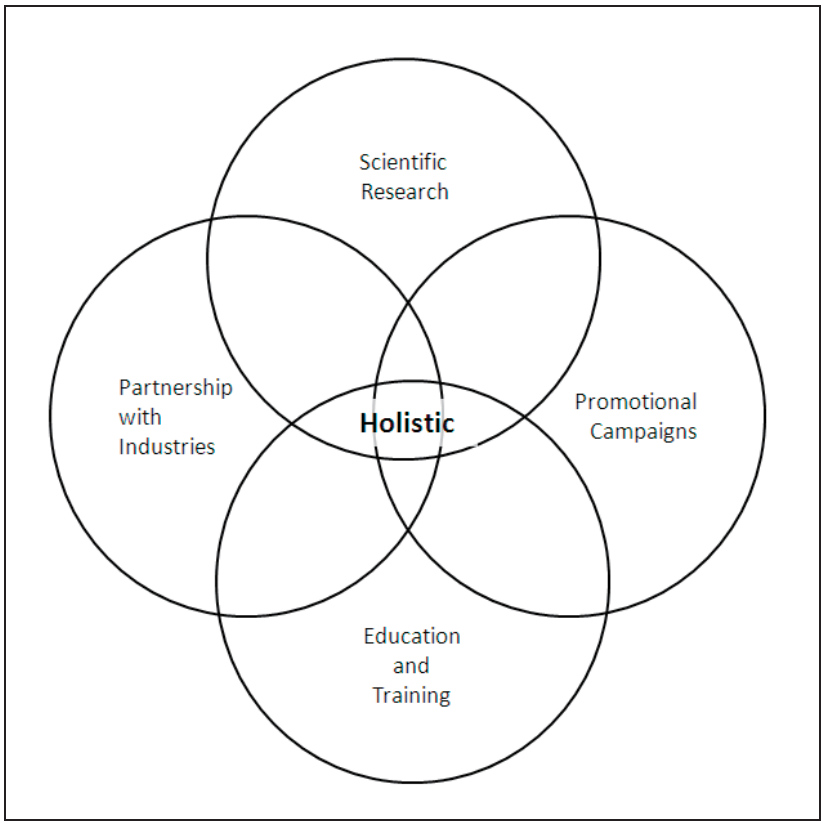

Figure 1. Holistic approach for promoting fall prevention and protection

Scientific Research

Scientific research is a key aspect to create knowledge for fall prevention and protection. Since the early 2000s, OSHC has been conducting research on working at height safety. Major research topics are listed in Table 1 below:

Table 1. Major research works on working at height safety

Year	Topics	Remarks
2000	Safety Attitudes, Safety Climate, and Employee Health Among Older and Younger Workers Working at Height in Construction Industry: A Facet Approach	
2002	An Engineering Study for Improving Safety and Reliability of Bamboo Scaffoldings	Joint research with university
2006	An Engineering Study for Safety & Reliability of Truss-out Metal Bracket Bamboo Scaffolding	Joint research with university
2010	Evaluating OSH Awareness amongst RMAA Contractors and Workers and in General Public	Evaluation also focused on safety knowledge and attitude of workers for working at height
2012	Follow up evaluation of OSH Awareness amongst RMAA Contractors and Workers and in General Public	Evaluation also focused on safety knowledge and attitude of workers for working at height

Findings of these researches were applied to partnership program, education and training, and promotional campaigns for fall prevention and protection. For example, the study on truss-out metal bracket bamboo scaffoldings at 2006, found out that the use of T-metal bracket has several advantages over the conventional I-metal bracket, including the ease for installation and better supporting to the scaffold (HK Occupational Safety and Health Council, 2006). Therefore OSHC has develop a sponsorship scheme to subsidy small and medium size construction companies to purchase T-metal bracket, and promote the advantages of T-metal bracket in the industry. What's more, the evaluation of safety knowledge and attitude of workers for working at height from 2010 to 2012, has identified the needs of these workers and help OSHC to determine the focus and most appropriate methods for working at height safety promotion.

Partnership with small and medium size enterprises

Partnership with Small and Medium size Enterprises (SMEs) is another important approach for fall prevention. Most SMEs suffered from financial constraints to improve work safety, therefore OSHC has formed strategic partners with SMEs to improve their safety performance by offering financial assistance and professional guidance. In 2005, OSHC launched sponsorship scheme for SMEs in construction industry to purchase safety harness, Transportable Temporary Anchorage Device (TTAD) and other fall arresting equipment (T-metal bracket as well started from 2006). The scheme not only provides safety devices, but also training for working at height safety and proper use of these devices. Up to mid 2013, there are more than 300 SMEs in Hong Kong participated the scheme. In 2013, OSHC also launched the sponsorship scheme for SMEs to purchase mobile working platform, and initiate a safety campaign on working at height to advocate the proper use of safe working platforms

Workers involved in Renovation, Maintenance, Alteration and Addition (RMAA) works are those exposing in high risk of fall from height, reflected by the fall from height accident case information issued by the Hong Kong Labour Department (Hong Kong Labour Department, 2013). In 2012, an "OSH Star Enterprise - Pilot Scheme on Safety Accreditation for the Renovation, Maintenance, Alteration and Addition (RMAA) Industry" was launched to augment supports on safety training, safety devices, as well as safety audit to improve the RMAA contractors' safety performance, and to offer premium discounts to the enterprises by the insurance companies.

The above partnership schemes not only offer financial assistance to purchase safety devices, but also promote the use of safety devices for fall prevention in the industry. Participating enterprises are required to assist OSHC to promote fall prevention and protection, by sharing their successful experience for using safety devices among other practitioners.

Promotional campaigns

OSHC has also launched many promotional campaigns to promote fall prevention. These campaigns focus on practitioners and promote the importance of safe working at height, the use of safe working platform, safety harness and other safety devices, and the latest technology for fall prevention. For example, the Construction Safety Promotional Campaign is a large scale annual promotional activity to promote fall prevention and workplace safety. The campaign includes competitions of "Outstanding Scaffolder in OSH" and "Best Fall Arresting Safety Enhancement Program" to recognize safe scaffolders and enterprises that implemented effective program for safe working at height. In addition, the Hong Kong OSH Award includes the "Safe Enhancement Program Award" to recognize outstanding fall protection and accident prevention innovations from the industries. All finalists of these awards are required to present their accident

prevention programs / innovations in front of other practitioners, so that effective fall protection measures can be promoted and benchmarked.

In 2010, OSHC and the Hong Kong Labour Department launched a two-year large scale promotional campaign on RMAA and working at height safety. This program involves a launching ceremony, site visits, seminars, exhibitions, television and radio programs, advertisements, posters and leaflets, etc., in order to promote RMAA and working at height safety by an all-round approach. According to the evaluation results of this campaign, more than 80% interviewees, which are all RMAA workers, agreed that this campaign has a positive effective on their safety attitude and behaviour at work (HK Occupational Safety and Health Council, 2013).

Education and training

OSHC pays attention to education and training in workplace safety and fall prevention through various training courses and workshops. Apartment mock-up with truss-out scaffold is set up at OSH Academy of OSHC, in order to demonstrate safe truss-out scaffold and the use of fall arresting devices such as TTAD. The OSH Academy also provides safe working platforms, ladders and fall arresting systems, which enable course and workshop participants to have practical experience for using these devices and systems.

To educate the workers for the safety measures in working at height, various publications such as posters, leaflets, bulletins and articles are published. OSHC also conduct the education in several interactive means, including the "Life on the Line" exhibit in OSH Gallery in Hong Kong Science Museum which shows the consequence of falling from height without safety harness; the "Construction Industry Accident Analysis" interactive software which enable users to learn the causes of fall from height accidents by participating the accident investigation; and the OSH e-learning system which provide on-line learning opportunity for the use of personal protective equipment including safety harness.

The education of the importance of fall prevention not only focuses on industrial practitioners, but also extends to youths. OSHC provides OSH workshop for secondary school students and designed tailor-made training kit to equip students with safe working at height and other OSH knowledge, in order to well prepare them to work safely in their future careers.

Achievement

Through the holistic approach on the fall prevention in the workplace which incorporates with research, industries partnership, promotional campaigns and education and training, the number of fall from height accident has been decreased in recent years. According to the statistics provided by the Hong Kong Labour Department, the number of fall from height accident has reduced 55% from 1998 to 2012 (Figure 2), and the number of fatal cases has reduced 35% in the same period. It is encouraging to see that the promotion of safe working at height and the provision of safe working equipment and training to the SMEs, have effectively reinforce the adoption of safe working methods among front-line workers and to enhance the safety awareness of both the enterprises and employees. According to the evaluation results of OSH awareness amongst RMAA contractors and workers, the percentage of RMAA workers those have heard about and used TTAD, has increased 40.4% from 2010 to 2012; and the Safety Climate Index on "perception of safety rules and procedures" has increased 4.4 in the same period (HK Occupational Safety and Health Council, 2013).

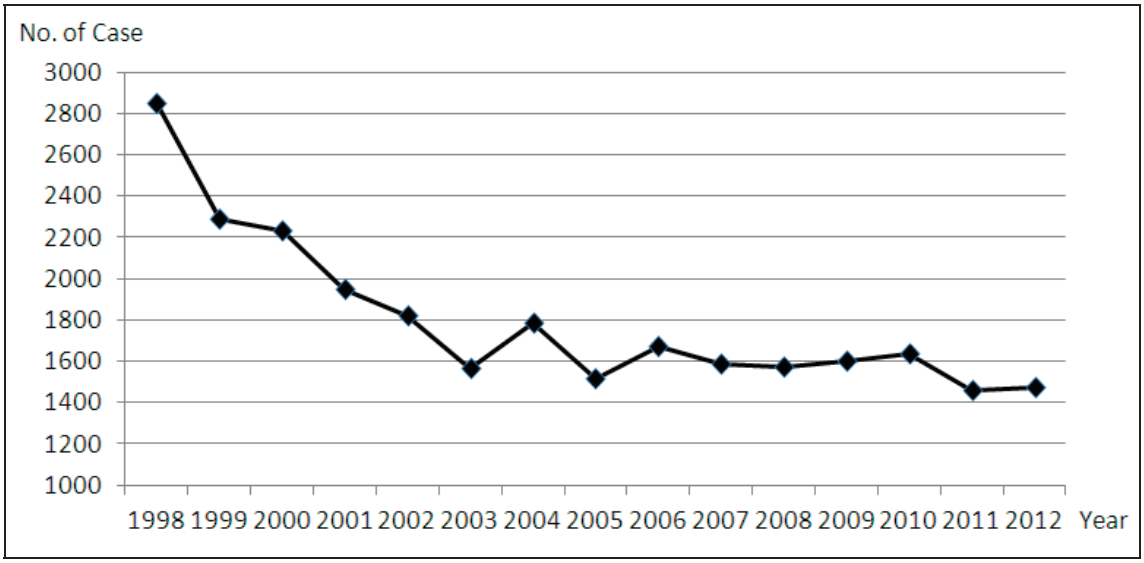

Figure 2. Number of fall from height accidents in Hong Kong (data source: Hong Kong Labour Department)

Conclusion

Proofed by the accident statistics and evaluation results of OSH awareness amongst RMAA contractors and workers, the holistic approach used by OSHC for the fall prevention and protection can effectively reduce the number of fall from height accident cases and improve the OSH awareness of workers in Hong Kong. With the joint efforts of employers, employees, the government and insurance industry on fall prevention, we believe the fall accidents will continue to be reduced in the future.

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