SPORT INJURIES OF HONG KONG DANCESPORT COUPLES

BY

CHENG CHING LEONG

09012788

AN HONOURS PROJECT SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

BACHELOR OF ARTS

IN

PHYSICAL EDUCATION AND RECREATION MANAGEMENT (HONOURS)

HONG KONG BAPTIST UNIVERSITY

April, 2012

HONG KONG BAPTIST UNIVERSITY

30th APRIL, 2012

We hereby recommend that the Honors Project by Mr CHENG CHING LEONG entitled "SPORT INJURIES OF HONG KONG DANCESPORT COUPLES" be accepted in partial fulfillment of the requirements for the Bachelor of Arts Honors Degree in Physical Education and Recreation Management.

_____	_____
Dr. Lobo LOUIE	Prof. Lena FUNG
Chief Advisor	Second Reader

DECLARATION

I hereby declare that this honors project "SPORT INJURIES OF HONG KONG DANCESPORT COUPLES" represents my own work and had not been previously submitted to this or other institution for a degree, dioploma or other qualification. Citations from the other authors were listed in the references.

_____

Cheng Ching Leong

Date: 30th April, 2012

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my chief advisor, Dr. Lobo Louie for his professional advices and valuable recommendations throughout the entire project period. I would also like to thank Prof. Lena FUNG for being my second reader.

Appreciation was given to the cooperation of the following parties:

Hong Kong Baptist University

Hong Kong Baptist University SU Dancesport Society

Hong Kong Dancesport Association Ltd

Dr. Judy IP

Alan Li Dancing Studio

Mr and Mrs CHENG

Mrs Apple YUK

Miss Mandy MA

18TH of Physical Education and Recreation Management

Cheng Ching Leong

Department of Physical Education

Hong Kong Baptist University

Date: 30th April, 2012

ABSTRACT

Dancesport becomes more and more popular sport in Hong Kong. The dancers come from kindergarten students to the elderly. It is suitable for all people to participate in this activity. Every sport has risk of injury. It is necessary to prevent injury to occur. The aim of this study was to understand the injury pattern among Hong Kong Dancesport couples.

In the study, there were 241 respondents who aged from 11 years old to 55 years old or above. Some of them were Ballroom dancers and some were Latin dancers. They were invited to do the questionnaire (Appendix A).

The result showed that 72 out of 241 (29.9%) dancers have suffered injuries in the past one year. Significant differences were found in age group, warm up exercise and years of experience. The incident rate of dancesport injuries is 2.47 per 1000 dancing hours. Senior dancers had the highest risk of injury. The five most common injuries were should strain (29.6%), ankle sprain (29.6%), ankle overuse (28.2%),

knee overuse (23.9%) and thigh strain (22.5%). Intrinsic factors played majority reason of injury. Over training (45.1%) is the main reason. 71.8% injured dancers chose rest to treat the injuries.

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Chapter 1

Introduction

Dancesport, playing a more and more important role in the world in recent years, combines dance, sport and music. Five Latin dances (Cha Cha, Rumba, Jive, Paso doble and Samba) and five Ballroom dances (Waltz, Tango, Viennese Waltz, Foxtrot and Quick step) are included in dancesport. In 1990, dancesport was regarded as one of the international competitive sports by International Olympic Committee. It was the official competition event in 2005 East Asian Games (EAG). Some Hong Kong couples gained a remarkable result in 2009 EAG hold in Hong Kong which made the public pay attention on this sport.

Dancesport had been one of the School Sports Programmes from 2002 which was organized by Leisure and Cultural Services Department. In addition, with help of Hong Kong Dancesport Association Limited, dancesport became a popular activity in

schools and communities. The participating groups of the sport were from children to the elderly. It is the time to recognize the injuries of this oncoming sport in order to prevent the injuries to occur.

Statement of the Problem

The purpose of this study was to investigate the injury patterns of different gender, age, levels of dancesport players in Hong Kong. Moreover, cause, nature and treatment of dancepsort injuries were included in this study.

Research Hypothesis

There will be significant difference of gender-related injury patterns of dancesport players.

There will be significant difference of age-related injury patterns of dancesport players.

There will be significant difference of level-related

injury patterns of dancesport players.

There will be significant difference of injuries with regular warm up exercise.

Definition of Terms

The operational definitions of the terms in this study were defined as follows:

Sports Injury

It refers to any kinds of injuries that occur during sports or exercise, which may result from accidents, poor training practices, and improper equipments, lack of conditioning, or insufficient warm up and stretching. (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2009)

Warm up

It refers to light exercises and stretches prior the exercises that gradually increase the level of activity until the proper level is reach (Powers & Howley, 2009).

Cool down

It refers to slow walking and stretching exercise after the exercise that gradually return the heart rate and blood pressure to normal(Powers & Howley, 2009).

Delimitations

The results of the study were delimited by the followings:

1. The subjects were delimited to males and females dancesport players aged from 11 to 55 years old or above.
2. The subjects were delimited to the players who regularly participated in dancesport at least once a week in past three months.
3. Incidence of injuries was delimited to the past year.

Limitations

The following limitations should be considered when

interpreting the results of this research:

1. It was assumed that the injury items of the questionnaire are enough to measure the common types of injury.

2. It was assumed that all subjects would answer the questionnaires honestly.

3. It was assumed that all subjects were able to identify their injuries.

Significance of Study

Every sport had a risk of injuries. To be an oncoming sport among the public, the researches of dancesport injuries were not enough. This study was to identify injury patterns among different gender, age and levels dancesport players in Hong Kong. Also, the important of warm up and cool down will be investigated in the study.

Furthermore, this study could provide information for instructors to plan a better training schedule for their

students so as to reduce the risk of injuries and improve the players' performance. It could contribute the further development of dancesport in future.

Chapter 2

Review of Literatures

In this chapter, past literatures relating this study would be showed. The review of literatures was divided into following sections:

(a) Reasons of Dancesport Injuries,

(b) Common Injuries among Dancesport players,

(c) Methods to Reduce the Risks of Injuries,

(d) Summary.

Reasons of Dancesport Injuries

Many researchers have been done on dance injuries. Dance and dancesport injuries are similar as both activities emphasize turning, landing, power, speed, flexibility and body movement. Therefore, different dances including Hip Hop, Jazz, Modern dance, Ballet, Sasa, Social Dance and Dancesport had similar field of injuries. There are many reasons of dance

injuries. It relates to dancesport injuries as well.

Injury was defined as "any mishap occurring during scheduled classes that made a dancer miss 2 or more days of practice sessions and was diagnosed as such by a health care professional" (Malliou, 2007). Injuries were classified into three degrees of severity: minor (absence for less than 1 week to 2 days), moderate (absence for 1 week to 1 month) and major (absence for more than 1 month).

Most of dancers had different kinds of lower limb injuries. Jumping and turning are mutual movement in all dances. Knee and ankle were common injury areas among various dancers. Intrinsic reasons contributed more in this case. Many dancers got lower limb injuries as a result of poor levels of physical fitness and simultaneous presence of strong and weak muscles in a same limb (Koutedakis and Jamurtas, 2004) which was related to running injuries. Moreover, some dancers were lack

of jump-specific and balance-specific training. Inadequate technique of landing and balance was the main factor of Anterior Cruciate Ligament injury (Orishimo, 2009).

Apart from intrinsic reasons, some extrinsic factors give the opportunities to injure. “Suitable footwear used is a basic requirement when dancing” (Garnham, 2001). Ballroom shoes and Latin shoes are designed for better turning. However, the center of gravity of ballroom and Latin is different so the heel of Latin shoes is higher than the heel of Ballroom shoes. If a dancer wears a pair of Latin shoe when dancing Ballroom, although Latin and Ballroom are dancesport as well, the risk of injuries may increase. Besides, floor surface is quite important. To reduce the pressure of landing and friction of turning, dancing floors are made by multi-layer sapele woods. The performance characteristics of the floor are shock absorption and surface friction. Plastic floors and tiles are not recommended to use when dancing. Therefore, the

floor surface and footwear used contribute a lot to the factors of dancesport injuries (Garnham, 2001).

Lower back can be regarded as another frequently injured site, which together with pelvis and lower limbs, accounting for more than 90% of dance injuries (Koutedakis and Jamurtas, 2004). Some dancers ignored the important of warm up exercise which is the principal reason of lower back injury. In Latin dances, male often lift female up in some steps. The lower back is burdened suddenly and cannot support the weight of female. Also, inadequate turning steps and excessive hip movements were attribution of lower back injuries.

Common Injuries among Dancesport players

Dancesport is not a contact team sport like soccer and basketball but it still has own particular injuring sites at a high risk. Anterior cruciate ligament is an example. Jive and Samba in Latin dance and Quick step in Ballroom dance

involve jumping, stepping and bouncing at a high speed. All dances require single-leg landing so as to increase the pressure of knee. Marijeanne Liederbach (2008) mentions that "forces at knee have been measured to exceed 12 times body weight when dancing". 12 out of 298 dancers experienced an anterior cruciate ligament injury over the five years period (Liederbach, 2008). Compared with other team sports involving jumping movement, the anterior cruciate ligament injury of elite dancers was not significant. The reason why the low rate of ACL injury is the elite dancers emphasized lower extremity alignment and jump and balance training (Liederbach, 2008). According to Marijeanne Liederbach research (2008), the average age of ACL injury was 24.0 ± 4.9 years for the women and 21.5 ± 3.5 years for the men. Furthermore, most of the ACL injury happened late in the day and late in the season (Liederbach, 2008). It was because the dancers fatigue after long period of training.

Lower extremities were suffering a lot form holding position for long periods of time and rigorous performance schedule. It made repetitive loading of the tension side of the tibial shaft. From 1992 to 2006, there were 1757 dancers evaluated at a dance medicine clinic and 24 of 1757 dancers (1.4%) had 31 tibial stress fractures (Miyamoto, 2009). Elite dancesport players practiced repetitive movement and skills which made tibial bear plenty of stresses. The first treatment of tibial stress fractures was rest more. The advice of physician was to take rest around 12 weeks (Miyamoto, 2009).

Methods to Reduce the Risks of Injuries

As similar as other sports, warm up and cool down can reduce the risk of injury. 58.7% of 404 dance instructors in Greece were injured (Malliou, 2007). Most of them were absent from class up to a month, 21.8% over a month and 12.9% up to a week. It indicated that the instructors got hurt easily after a long break which made the muscle weakness and lower ability of

stretching. However, the number of injured instructors appeared smaller if the warm up and cool down was about 15 minutes (Malliou, 2007). If the instructors performed private warm up and cool down, the probability of injuries would decline further. It also showed there was no relation between the injure rates and the types of stretching exercises. The study of Rothenberger reported that the ballistic stretching caused more injuries than static stretching.

As mentioned above, the lower extremity was a high risk area of injuries. It was because most of dancers overused and exercised their legs repeatedly. Comprehensive management could significantly reduce the problems of overuse before they became serious injuries (Bronner, 2003). Also, the comprehensive management program declined the incident of new cases.

Chapter 3

Method

The method of this study was presented in the following sections: 1) The subjects, 2) development of questionnaire, 3) Procedures and 4) Method of analysis.

The Subjects

The subjects were both male and female dancesport couples. Hong Kong Dancesport Association Ltd, Alan Li Dancing Studio and Hong Kong Baptist University Student Union Dancesport Society were invited. The sample size was 241 players.

Development of Questionnaire

A self-designed questionnaire was used as the method of collecting data (see Appendix A) because there was no previous studies data collection instrument available. The procedures for developing the self-designed questionnaires were based on reviewing the journals which were related to the research

topic. The questionnaire was written in Chinese and aimed to have direct communication with the subject. The development of the questionnaire consisted of 13 questions which were divided into two parts.

In the first part, the demographic information of the respondents such as gender, years of experience, types of dancesport, training hours, warm up and cool down exercise and perceived knowledge on injury were investigated. They were not required to give their names.

In the second part, it focused on injuries caused by dancesport within one year period. Common injuries in dancesport were investigated. The cause of injuries was divided into intrinsic and extrinsic factors. The treatment of injuries was asked as well.

Procedures

In order to assess the suitability of the questionnaire before the actual adoption for the main study, a pilot test

was conducted with Dr. Judy Ip and couples from Hong Kong Baptist Dancesport team. The aim of the pilot test is to test whether the wordings were comprehensible and acceptable.

In the main study, questionnaires were administered to the subjects by their teachers or instructors. The purpose of the study has been explained to the subject by the administrator. Distribution of the questionnaires to different studios and associations was start from March 2012. All results and data were kept confidentially and anonymous.

Method of Analysis

Collected data was input SPSS 18(Statistical Package for the Social Science) and Microsoft Excel. An alpha level of $p<0.05$ indicated statistical significance.

Descriptive statistics such as frequency, mean, standard deviation and percentage will be used to describe the social

demographic information such as the personal data, exercise, warm up and cool down and injury patterns of the subjects.

Chi square will be used to determine whether there are any significant differences among different gender, age group and years of experience of dancesport players in Hong Kong.

Chapter 4

Analysis of Data

The aims of this study were to investigate the injuries patterns of dancesport players in Hong Kong. It also mentioned the cause and treatment of injury.

The descriptive statistics, crosstabs and Chi square were used to analyze the data. The analyses of the data were presented in the following results:

1. Demographic information of respondents
2. Gender, age group and warn up patterns with percentage of injuries
3. Chi square test on the frequency of injuries in gender, age group, the years of dance, types of dancesport and warm up exercise
4. Incident rate of dancesport
5. The five most common injuries in dancesport
6. Cause of injuries
7. Treatments of injuries

Results

Demographic information of respondents

There were 241 dancesport players involved in the study. 238 players out of 241 showed their gender. There were 83 male (34.9%), 155 female (64.3%) and 3 missing value. The gender distribution was showed in Table 1.

Table 1 **Gender of players (N=241)**

	Frequency	Percentage
Male	83	34.4
Female	155	64.3
Total	238	98.8
Missing	3	1.2

For the age group, 78 dancers aged 11-17 (32.4%), 120 dancers aged 18-34 (49.8%), 31 dancers aged 35-54 (12.9%) and 12 dancers aged 55 or above (5.0%).

Table 2 **Age group of players (N=241)**

	Frequency	Percentage
11-17	78	32.4
18-34	120	49.8
35-54	31	12.9
55 or above	12	5.0

Respondents have different dancing year of dancesport. 47 dancers (19.5%) joined the activity less than three months. 44 dancers (18.3%) played dancesport within three months to one year. There are only 20 dancers (8.3%) participating dancesport from one to two years. 55 dancers (22.8%) have played it between two to five years. The most respondents dance more than five years. There are 75 dancers (31.1%).

Table 3 Years of experience (N=241)

	Frequency	Percentage
Less than 3 months	47	19.5
3 months to 1 year	44	18.3
1 to 2 years	20	8.3
2 to 5 years	55	22.8
5 years or above	75	31.1

There are two types of dancesport which are Latin dance and Ballroom dance. In 241 players, 123 players (51.0%) dance both of them. Also, there are 91 players (37.8%) dancing Latin and 27 players (11.2%) dancing Ballroom.

Table 4 **Types of dancesport (N=241)**

	Frequency	Percentage
Latin	91	37.8
Ballroom	27	11.2
Both	123	51.0

Gender, age group and warm up patterns with percentage of injuries

In 238 players, 83 of them are male and 155 of them are female. Count percentage of gender, 24 male dancers (28.9%) and 46 female dancer (29.7%) got hurt in past one year. 70 dancers (29.4%) out of 238 injured in different ways.

Table 5 **Gender with % of injuries (N=70)**

	Frequency	Percentage
Male	24	28.9
Female	46	29.7

Overall in the study, there were 72 out of 241 (29.9%) dancers have suffered from different kinds of injuries in the past one year. Table 6 illustrated the percentage of injuries among different age groups. Significant difference was found in Table 6. Count percentage within age, aged 35-54 had the highest injury rate 45.2%. However, there was no correlation of injury with age. 29 aged 11-17 players (37.2%) and 25 aged 18-34 players (20.8%) injured in past one year. Besides, 4 aged more than 55 years old dancer (33.3%) got hurt.

Table 6 **Age group with % of injury (N=72)**

	Frequency	Percentage
11-17	29	37.2
18-34	25	20.8
35-54	14	45.2
55 or above	4	33.3

In the pattern of warm up exercise, only 14 of 241 dancers (5.8%) did not warm up before dancing. The highest injury rate (64.3%) is the dancers who did not warm up.

Table 7 **Warm up with % of injury (N=72)**

	Frequency	Percentage
Never	9	64.3
Less than 5 minutes	13	16.5
5 to 10 minutes	24	27.3
More than 10 minutes	26	43.3

Chi square test on the frequency of injuries in gender, age group, the years of dance, types of dancesport and warm up exercise

Chi square test was performed to find out whether there are any significant differences between the frequency of injuries in different categories. The significant difference would be found when alpha level of $p<0.05$. Data were showed in Table 8.

Significant differences were found between the frequency of injury in different age group ($p=0.017$), years of dancing ($p=0.000$) and warm up exercise ($p=0.000$).

However, results showed that there was no significant between the frequency of injury in different gender and types

of dancesport.

Table 8

	Value	Asymp. Sig. (2-sided)
Gender	.015[a]	.902
Age Group	10.195 [a]	.017
Years of experience	25.288[a]	.000
Types of dancesport	5.066[a]	.079
Warn up exercise	20.175[a]	.000

Age group, years of dancing and warm up exercise had the significant differences. However, there was only years of dancing had correlation as shown Table 9. The senior dancers had a higher opportunity of injury than the junior dancers. There were no correlation of age group and warm up exercise.

Table 9 Correlation for different categories

	Value	Approx. Sig.
Age group	.001	.982[c]
Years of experience	-.301	.000[c]
Warm up exercise	-.093	.149[c]

The five most common injuries in dancesport

The details of the all injuries in dancesport were shown in table 10. Shoulder strain and ankle sprain with 21 cases out of 71 injuries (29.6%) were the most common injuries among all dancers. Ankle overuse (28.2%), knee overuse (23.9%) and thigh strain (22.5%) also were common injuries among all dancers

Table 10 All injuries in dancesport

Injury	Frequency	Percentage
Shoulder strain	21	29.6
Shoulder sprain	4	5.6
Frozen shoulder	1	1.4
Shoulder bruise	5	7.0
Waist strain	14	19.7
Waist sprain	8	11.3
Spinal disc displacement	1	1.4
Waist overuse	13	18.3
Hip sprain	6	8.5
Thigh strain	16	22.5
Knee sprain	6	8.5
Knee overuse	17	23.9
ACL injury	2	2.8
Meniscus tears	1	1.4
Lower leg strain	13	18.3
Ankle sprain	21	29.6
Ankle overuse	20	28.2
Plantarfasiitis	10	14.1
Ankle fracture	1	1.4

The incidence rate of injury

For the injured players, they were asked to identify the injuries they have suffered form. There were 19 different injuries concluded from the study. The total frequency of all dancesport injuries in 241 dancers is 180 in past one year. The total practice hours of them are 1400 hours per week. In a year, the total practice hours are estimated to be 72800 hours. Therefore, the incidence rate of dancesport is 2.47 in 1000 hours.

Table 11 The incident rate in 1000 hours

	Total incident rate
All dancesport injuries	2.47

Cause of injuries

In the questionnaire, causes of injury were classified into intrinsic and extrinsic factors which were shown in Table 12. 32 injured dancers (45.1%) thought over training is one of

the reasons, followed by wrong posture (39.4%) and lack of warm up (39.4%). These top three reasons were intrinsic factors. For extrinsic factors, 24 dancers (33.8%) got injury because of sliding floor. Dark environment (4.2%) and dancing without dancing shoes (9.9%) only contributed a small part in dancesport injuries.

Table 12 **Cause of injuries**

Cause	Frequency	Percentage
Lack of warm up	28	39.4
Over training	32	45.1
Wrong posture	28	39.4
Sliding floor	24	33.8
Dark environment	3	4.2
Without dancing shoes	7	9.9

Treatments of injuries

After injury, there were some ways providing dancers choosing. Since most of the injuries were minor, rest was the major way of treatment, 51 dancers (71.8%) rest for recovery. Massage (32.4%) and Physiotherapy (26.8%) came after. Chinese chiropractor (22.5%) also was a common way to recover. A&E

service (2.8%) and acupuncture (9.9%) were unusual.

Table 13 **Treatments of injuries**

Treatments	Frequency	Percentage
Rest	51	71.8
Physiotherapy	19	26.8
A&E	2	2.8
Chinese chiropractor	16	22.5
Acupuncture	7	9.9
Massage	23	32.4

Discussions

A total 241 dancesport players responded in this study. The result could be used to give more information of dancesport injury, cause and treatment of injury as well as the effect of demographic backgrounds which may affect the injury rate. There was no previous study discussing dancesport injury. It cannot to make direct comparison with ballet and modern dance injury. There was no reliability to compare dancesport injury with ballet and modern dance injury. Therefore, what the result showed is the majority part of discussion.

Demographic information of respondents

241 dancers were involved in this study. It covered a wide range of dancers such as different gender, age and levels. 34.9% of them were male and 64.3% were female. The number of female almost was equaled double of male as there were more female dancers in Hong Kong. In some competitions, the prizes were divided to couple dance as well as two girls dance.

Near half of respondents (49.8%) were aged 18-34. It was because most of them are Hong Kong Baptist University students. There were only a few dancers more than 55 years old since the data was collected from competitions. The elderly seldom participated in competitions. Also, most of the respondents' dancing year was 5 years or above as they were elite dancers in competitions.

Reason of injuries

The result showed the intrinsic factors contributed more than extrinsic factors. The top three causes of dancesport injuries are over training, lack of warm up and wrong posture. Garnham (2001) mentioned that the floor surface and footwear were the main factors of dance injuries. However, the result indicated these extrinsic factors played minor role in dancesport injuries. 33.8% dancers got hurt because floor surface while only 9.9% dancers injured when dancing without dancing shoes. It may reflect most of the dancers wearing

suitable Latin or Ballroom shoes when dancing. Suitable footwear is a basic requirement of dancing (Garnham, 2001)

Common injury types and areas

In the study, shoulder strain and ankle sprain (29.6%) were the most common injuries in dancesport. It is surprise as other researchers believed that lower limb injuries dominated in all dance injuries (Koutedakis and Jamurtas, 2004). However, in this study, there was no significant difference between lower limb and non-lower limb. Thigh strain (22.5%), waist strain (19.7%) and waist overuse (18.3%) also were main reason of dancesport injuries. Orishimo (2009) indicated that many dancers got Anterior Cruciate Ligament injury as there were many landing movement. Landing in dancesport was not as much as ballet or modern dance. Therefore, only 2 out of 241 dancers (2.8%) got ACL injury in past one year. The incident rate was less than Liederbach study (2008) which showed 12 out of 298 dancers experienced an anterior cruciate ligament injury over

the five years period. Besides, there may be another reason of low ACL injury rate. Elite dancers emphasized lower extremity alignment and jump training (Liederbach, 2008).

Chi square test for age group, years of dancing and warm up exercise

Significant differences were found between the frequency of injury in different age group ($p=0.017$), years of dancing ($p=0.000$) and warm up exercise ($p=0.000$). However, only years of experience had correlation ($p=0.000$). There was no correlation age group and warm up exercise ($p>0.05$). It is because the distribution of elite dancers. For age group, as usual, the elderly had the highest percentage of injury than the younger groups and there was an increasing trend of injury with age. Nevertheless, there were only 12 dancers aged 55 or above and it could not reflect the real situation. The reason why aged 18-34 group is the lowest percentage of injury is that most of junior dancers came from this age group.

Warm up exercise also showed an interesting data. Kroner (1990) found that players above 30 took significant less time to do warm up than the younger group. Also, not enough warm up exercise would increase the risk of injuries. This study, however, indicated the longer warm up exercise, the higher risk of injury. Dancers who do warm up less than 5 minutes (16.5%), 5 to 10 minutes (27.3%) and more than 10 minutes (43.3%) injured in the study. It is related to the years of experience as well. Most of senior and experienced dancers preferred do longer warm up exercise. And the risk of senior dancers was the highest. As a result, it showed the dancers who do longer warm up exercise had higher risk of injury.

Treatments of injuries

Rest was the most common way (71.8%) to treat after injuries. It may be because the injuries were minor or they did not take it seriously. Therefore, they did nothing after injury. Massage was the second common treatment. It was attractive

of aged 35-54 group and some dancers massaged every single day to recover their muscle

Chapter 5

Summary and Conclusions

This chapter consists of three main parts. There are (1) Summary of Results (2) Conclusion and (3) Recommendations for future study.

Summary of results

The results of the study were summarized as following:

1. In 241 dancers, 34.9% dancers were male and 64.3% were female. Most of them (49.8%) are aged 18-34. 22.8% danced from two to five years and 31.1% dancers danced more than five years. More than half (51.0%) danced both Latin and Ballroom.
2. There were 72 out of 241 (29.9%) dancers have suffered injuries in the past one year. Significant could be found in age group but there was no correlation. Aged 35-54 had the highest injury rate 45.2%. The lowest injury rate is aged 18-34 group (20.8%).
3. 88 dancers (36.5%) spent 5 to 10 minutes and 60 of them (24.9%) used more than ten minutes to do warm up exercise. 79 (32.8%)

only used less than 5 minutes to warm up and there were 14 (5.8%) dancers did not warm up before dancing. The highest injury rate (64.3%) is the dancers who did not warm up. The difference was significant but also no correlation.

4. Only years of experience had both significant and correlation. The dancers dancing more than five years was the highest risk of injury. The senior dancers had a higher opportunity of injury than the junior dancers.
5. The five most common injuries in dancesport were shoulder strain and ankle sprain (29.6%), ankle overuse (28.2%), knee overuse (23.9%) and thigh strain (22.5%).
6. There were 19 different injuries concluded from the study. The incident rate of injury of dancesport is 2.47. It showed there were 2.47 injury cases in 1000 hours.
7. Most of the causes of injuries were intrinsic factors; for examples, over training (45.1%), wrong posture (39.4%) and lack of warm up (39.4%). Extrinsic factors played a minor role such as sliding floor (33.8%), dark environment (4.2%)

and dancing without dancing shoes (9.9%)

8. Common ways to treatments were rest for recovery (71.8%), massage (32.4%), physiotherapy (26.8%) and Chinese chiropractor (22.5%).

Conclusion

This study gives the injury patterns among Hong Kong dancesport players. Although there are not many serious injuries, it is necessary to reduce the rate of risk, particular overuse. Over training makes the trunk and lower extremities muscles overuse. Also, the instructors should focus on the appropriate posture as most of the injuries were caused by wrong posture. Warm up exercise is very important. The exercise should extend more than 5 minutes before each dancing to prevent injuries. Furthermore, dancers have to treat their injuries seriously. Not only take a rest at home, but also visit physiotherapy.

Significant differences were found in age group, years of

experience and warm up exercise but only year of experience had correlation. Senior dancers need to pay more attention on injuries as they are the highest risk group. Warm up and cool down are essential before and after dancing. Massaging is another useful way to rehabilitate the overused muscle.

Recommendation for Further Studies

Base on the study, the following recommendation are presented for further studies:

1. The respondents were limited. It may not reflect all dancers in Hong Kong. The sample size should be more than 500 and cover different levels of players.
2. The study does not include new and recurrent injuries. Further studies can find the relationship of them.
3. Female dancers were twice of male dancers. Researchers can consider male step dancers and female step dancers instead of male and female dancers. Therefore, the number of male step and female step dancers will balance

and it is easy to find out the injury patterns of male and female step dancers.

4. Research can include what the dancers will do in order to reduce the risk of injuries.
5. Research can divide coaches and players into two different groups or only focus on single group.
6. Incident rate

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Appendix A

香港浸會大學體育學系
有關體育舞蹈運動創傷的問卷調查

您好，本人是香港浸會大學體育及康樂管理文學士(榮譽)學位課程的三年級生，現正進行一項有關體育舞蹈運動創傷的調查，這項調查是以不記名方式進行，而閣下提供的所有資料只作研究用途。

請在適當的□內填上「✓」

甲部 （請勿填上姓名）

1. 性別: □男; □女
2. 年齡: □11-17; □18-34; □35-54; □55 或以上
3. 您進行體育舞蹈訓練/活動多久?
   □少於三個月 □三個月至一年 □一年至兩年 □兩年至五年
   □五年或以上
4. 您跳的體育舞蹈是?
   □拉丁舞 □標準舞 □兩者皆是
5. 過去一年內，您平均每星期進行多少小時的體育舞蹈訓練/活動?
   _____小時
6. 過去一年內，您有沒有參加體育舞蹈的比賽或表演?
   □有 □沒有
7. 跳體育舞蹈前，您平均用多少時間作熱身運動?
   □沒有 □少於五分鐘 □五至十分鐘 □多於十分鐘
8. 跳體育舞蹈後，您有沒有做緩和運動?
   □有 □沒有
9. 您認為您對預防體育舞蹈受傷的知識足夠嗎?
   □足夠 □不足夠
10. 過去一年內，您有沒有因體育舞蹈而受傷(拉傷、扭傷或勞損等)?
    □有(到乙部) □沒有

轉後頁

乙部

1. 過去一年內，您曾因體育舞蹈而出現以下哪些受傷? (可選多於一項)

   上肢

   肩部: □拉傷 □扭傷 □肩周炎

   手肘: □撞傷

   軀幹

   腰部: □拉傷 □扭傷 □脊骨移位 □勞損

   臂部: □扭傷

   下肢

   大腿: □拉傷

   膝蓋: □扭傷 □勞損 □十字韌帶撕裂 □半月板碎裂

   小腿: □拉傷

   足踝: □扭傷 □勞損 □足底筋膜發炎 □骨折

   其他(請註明):_____

2. 您認為下列哪些是您受傷的因素? (可選多於一項)

   個人因素:

   □熱身不足 □訓練過度 □姿勢不正確 □其他(請註明):_____

   外在因素:

   □場地太滑 □光線不足 □沒有穿適當的跳舞鞋 □其他(請註明):_____

3. 受傷後，您會如何處理傷勢? (可選多於一項)

   □休息 □物理治療 □急症室 □跌打 □針灸 □推拿按摩

   □冷熱交替法 □其他(請註明):_____

多謝您寶貴的意見