

Survey Study on the Injury Patterns, Dance Practices and Health Seeking Behaviour amongst Dancers in Singapore

Dear Editor,

Dancers are exposed to training loads that can lead to injuries, the majority of which are overuse in nature.¹ Their lower limbs and back are often injured.^{1,2} There are a myriad of factors that can contribute to the injuries. However, there is relatively little local data on injury patterns among dancers in Singapore. The objective of the study is to gather data on the practices of dancers, the prevalence of dance injuries, and injury patterns among Singapore dancers.

Materials and Methods

Students at commercial dance and vocational schools, and professional dancers aged 21 years or older were recruited. The survey was conducted with anonymous self-administered questionnaires which were distributed via a dance instructor and administered prior to and after classes. Dancers also had the option of completing the survey online. A dance instructor was consulted on the design of the questionnaire which was made to be self-explanatory and could be completed in 10 minutes. To reduce ambiguity, each question was provided with mutually exclusive responses. The questions pertaining to injuries were modelled after those used in injury surveillance in sports.^{3,4}

Biodata, experience and education in dance, genre(s) of dance practised, level of participation, weekly training load, location, recurrences, extent and diagnoses of current injuries, participation in other physical sports, physical conditioning practices, and response to injury were recorded.

Statistical Analysis

The responses were tabulated on Microsoft Excel 2013 version 14.0, statistical analysis was performed for data checking and descriptive analysis of the variables was performed.

Results

There were a total of 365 respondents. Three percent of the questions were left unanswered while 1% of the answers were found to be erroneous.

The average age of those surveyed was 25.4 years (CI, 24.4 to 26.4). All the respondents were female. The average

body mass index (BMI) was 20.8 (CI, 19.6 to 22.0).

Thirty percent had 5 to 10 years of experience in dance while 26% had more than 10 years (Fig. 1). Two percent had a formal dance education while 32% and 13% were practising dance at semi-professional and professional levels, respectively.

The majority (77%) were engaged in at least 1 performance per year. Per week, 57% trained between 5 to 10 hours, 13% trained more than 10 hours, 49% had 3 or more rest days and 12% engaged in dance daily.

The results show that 67.4% of respondents participated in multiple genres of dance concurrently (Fig. 2).

Dance Injuries

Dance-related injuries were present in 53% of those surveyed, of which 40% resulted in absenteeism from dance for less than 1 week. A large proportion (69.9%) had 1 to 2 recurrent injuries. Of these, 40.7%, 35.0% and 24.3% were professional, semi-professional and recreational dancers, respectively. The differences in recurrent injuries between the groups did not reach statistical significance (Chi-square test, $P > 0.5$). Forty-three percent identified dance as an aggravating factor. The majority trained 5 to 10 hours per week and 69% were engaged in 1 or more performances per year.

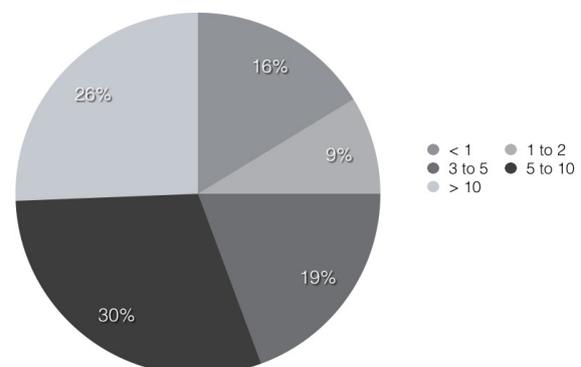


Fig. 1. Number of years in dance.

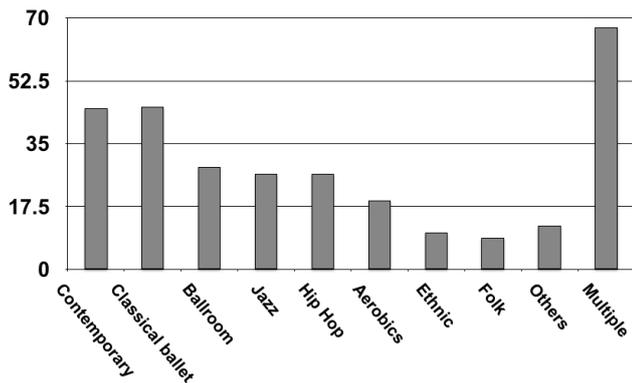


Fig. 2. Percentage of respondents and participation in dance genres.

Injuries of foot and ankle (53.8%), knee (48.9%) and back (34.1%) were the most common (Fig. 2). The majority (76.5%) of the injuries were overuse in nature, and 43.5% resulted in absenteeism from dance for 1 to 2 weeks and 14% required absenteeism of 5 weeks or more. Of the injured dancers that abstained from dance for more than 8 weeks, the majority (38.1%) were recreational dancers.

Of the injured, 42% chose to seek medical attention, 26.7% chose to ignore the injury and 32.7% abstained from dance to allow for recovery. Of the respondents that did not seek medical attention, 65.3% self managed with first aid.

Most of the injured dancers consulted a physiotherapist (33.3%), followed by a traditional physician (30.6%), medical specialist (20.6%) and primary care physician (16%).

Health Practices

Amongst the respondents, 64%, 92% and 44% were engaged in aerobic, flexibility and strength training, respectively.

Only 23% underwent musculoskeletal screening; 42.4% used massage as a form of recovery technique while 73.3% employed some form of active recovery (e.g. contrast bath, sauna). A large majority (94%) were non-smokers and half did not consume alcohol.

Discussion

The range of BMI from 15.1 to 34.0 is relatively wide compared to other studies of dancers^{5,6} but the BMI mean is still lower than that in the general population of Singapore.⁷

Twelve percent of the dancers did not have a rest day from dance. The hours of weekly training and simultaneous participation in different genres of dance have been reported

in other studies.⁶ Fatigue as a result of over-training has been identified as a risk factor for dance injuries.⁸

The high prevalence and recurrence of dance injuries as well as its tendency to affect the lower limbs have also been previously reported.^{1,2,6} This may reflect dance's intrinsically repetitive movements that may stress the foot and ankle regions, including other compensatory movements such as those needed to achieve turnout in ballet. The severity of dance injuries, as gauged by the duration of absenteeism from dance practice, is similar to most published data.⁹

Compared to other studies,^{2,9} the proportion of dancers that sought medical treatment was low. Amongst collegiate dancers, medical professionals was ranked third as the primary source of advice for the management of dance injuries, with only 17.7% of them seeking medical help from physicians.¹⁰

A significant proportion of injured dancers sought treatment from traditional medical professionals or masseurs, consistent with the high prevalence of use of complementary and alternative medicine here.¹¹ While the majority of dancers engaged in flexibility training, only two-thirds engaged in regular aerobic training while less than half engaged in strength training. The relatively low rates of aerobic and strength training might suggest a lack of recognition of comprehensive physical conditioning in injury prevention.

The prevalence of smokers in the study is significantly lower than that of the national average while the proportion of non-drinkers was close to the national average of 54%.⁷

Limitations

The study population was heterogeneous in the proficiency and level of participation in dance. The anonymous nature of the survey made it impossible to ensure that there had been more than 1 form submitted for each individual. Furthermore, there remains the possibility of inadvertent selection bias in the recruitment process. However, the anonymous nature of the study also made it impossible to study the characteristics of non-respondents or estimate the extent of selection bias.

Conclusion

This survey showed that Singapore dancers share similar characteristics and injuries with dancers in other studies and thus, they may benefit from dance prevention measures that are already in practice in international communities. Efforts to improve accessibility to medical care for dancers would have to take into account local usage of complementary and alternative medicine as well as the level of knowledge of medical professionals in the management of dance injuries.

Dance screening could be a useful measure for detecting and managing injuries early amongst dancers. Despite its limitation, the study provides previously unavailable information on the local dance population.

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