

CHAPTER I

INTRODUCTION



Background and Rationales

Participation in sports and physical activity is increasingly popular. Of the top five major sporting activities, running is one of the most popular (Yeung EW and Yeung SS., 2001). Running is a very popular activity for recreational and competitive athletes (Tillman MD. et al., 2002). Running was, and continues to be, the sport of choice for many, because of its convenience, health benefits, and economical nature (Taunton JE. et al, 2002). It is a low cost sport requiring only running shoes and some type of athletic clothing (Tillman M.D. et al., 2002).

The popularity of running and jogging has consistently increased during the latter half of the twentieth century and into the twenty-first. Millions of people worldwide participate for recreation and the physical benefits that come from running (Tillman M.D. et al., 2002). For example, 40 million individuals participate in the US alone (Taunton et al., 1998). In Hong Kong, there was an increase in participation in running from 9.6% in 1996 to 12.5% in 1998. A similar trend was found in other countries (Ballas MT et al., 1997; Van Mechelen W, 1992). Additionally, in Thailand, 500 questionnaires were sent to the joggers. It was found that almost joggers were men (66.89%), Age between 26–40 years old. Joggers were Motivated to jog by specialist and their friends. Jog for health and prevention, 5 days per week, 21 – 60 minutes per day. They like to jog in the stadium, fitness park and they have no planning for jogging (Jaidee M et al, 1986).

Unfortunately, as with any physical activity, overuse injuries can occur. Running is a sport which repetitive impacts occur and may be considered as a series of collisions to the ground (McMahon & Greene, 1984). In a review of epidemiological literature, van Mechelen (1992) reported incidence rates for running injuries between 37% and 56% for studies with at least 500 participants, age 14-70 years old.

Depending on the specificity of the group of runners concerned (competitive athletes; average recreational joggers; boys and girls) and on different circumstances these rates vary. About 50% to 75% of all running injuries appear to be overuse injuries due to the constant repetition of the same movement. The majority of running injuries, 70-80%, occur in the lower extremities. Analysis of prospective and retrospective survey studies and cohort studies of recreational and competitive runners, age 34-44 year old reveals a yearly incidence of injuries in runners of 24-85% (Blair SN. et al. 1987; Bovens AMP. et al, 1989). Overuse musculoskeletal injuries occur frequently in runners (Yeung EW and Yeung SS, 2001). The most commonly diagnosed lower limb soft tissue injuries were iliotibial band syndrome, tibial stress syndrome (often refer as 'shin splint'), patellofemoral pain syndrome (PFPS), Achilles tendonitis, posterior tibial tendonitis and plantar fasciitis (Heir, 1996; Vleck, 1998). These injuries range from inflammation to structural degeneration (Yeung EW and Yeung SS, 2001).

The most frequent registered injury in competitive athletes was tendinitis (Lysholm & Wiklander, 1987), in children were periostitis/stress fracture (Watson & DiMartino, 1987), in an 'average' jogging population were strain and tendinitis (Marti et al., 1988). Moreover, there are investigated injury rates between three groups of runners: elite middle distance, marathon, and recreational. Recreational runners had the highest incidence of knee injuries that were PFPS, whereas lower leg and foot injuries, mostly shin splint, were more prevalent in the elite middle distance class, and marathon runners had the highest rate of ITBFS (Iliotibial band friction syndrome) (Macintyre et al., 1991).

There are several factors appear to be associated with running injuries such as age, body mass index (BMI), weekly mileage, history of previous injury, running experience, footwear, running surface, weekly running frequency and duration etc (Yeung EW and Yeung SS, 2001; Taunton JE. et al, 2002; Van Mechelen, 1994; Marti 1988; Macera 1992). Preventive strategies are often dependent on modifying the training schedule (frequency, duration or running distance), the use of stretching or warm-up/cool down exercises and modifying footwear. These factors and preventive strategies are evident from the review that the subjects included were mostly young, active male subjects (Yeung EW and Yeung SS, 2001).

Aging is a normal biologic process. Most physiological functions decline with age, so the mobility of the elderly is more difficult and reflects the increasing rate of soft tissue injuries (Brooks and Fashey, 1988). The increase in injuries is most likely attributable to increasingly active lifestyles and to increased participation in sports activities by elderly (Sport injuries rising in the elderly, 2001). Exertional injuries are common among the elderly, and are connected mostly with degenerative aging processes. Muscle has been reported to be the most commonly acutely injured tissue among active elderly athletes. The lower extremities are the most susceptible to injury from sports activity (Kallinen M and Markku A, 1995). The majority of sports medicine literature has suggested that overuse due to repetitive high-impact loading of the lower extremities is a large contributor to injuries (Hreljac A et al, 2000; James SL et al, 1978; Marti B et al, 1988; van Mechelen W, 1992), also in older-aged runners (Matheson GO, 1989; Pollock ML, 1991).

Nowadays, the elderly most likely exercise for health as running and walking but this study prefer to study in running because the exercise for health as running is more excite than walking. Although, the prescription of exercise for the elderly is mainly directed toward activities with lower impact such as brisk walking, cycling, and swimming (Pollock ML et al, 1991). So it is valuable to know that the elderly who prefer to jogging or running for exercise for health can prevent their running injuries by themselves if they know about the associated potential risk factors of running injuries.

There are a lot of number of studies regarding injuries in runners, but intend to study in teenage or young people moreover than middle age and elderly people, as the risk factors of running injury may be different from each other. Besides that, the prospective studies in the elderly are not much as possible. In Thailand, the data is very limited, especially in middle age and elderly joggers. Thus, this study was undertaken to identify risk factors for injury and to determine the incidence of lower limb injury among middle age and elderly Thai joggers for health. This is benefit for middle age and elderly joggers and provide the preliminary data for further research.

Objectives

1. To identify risk factors of running injury in middle-age to elderly Thai joggers.
2. To determine the incidence of running injury in middle-age to elderly Thai joggers.

Scope of research

This study is a descriptive research design which prospectively monitored of middle-age to elderly Thai joggers.

The study approval was obtained from the University Ethics Committee. Written informed consent was obtained from each subject prior to participation. On attendance, subjects were given the details of the research procedure and risk involved, and reminded of their right to withdraw at any stage.

Assumptions

1. The questionnaire is created for use only in this study. According to an accuracy details and able to answer a question in this study. The contents of the questionnaire were calibrated for standard validity and reliability by the specialist.
2. The equipments were calibrated for standard accuracy and reliability.
3. All volunteers participated as subjects in this study are voluntary.

Limitations

This study was only volunteered by the middle-age to elderly subjects aged between 45-75 years who jogging in the public park. All were healthy and had no injuries before joined the study. The result of study may not be refer to the general middle-age and elderly people or the other kind of sports.

Operational definition

1. Running injury is defined as any soft tissue injuries resulting from running. These types of injuries are major source of pain and disability. It also covers all tissues except bones such as muscle, tendon, joint capsule and connective tissue. The sign and symptoms are pain, swelling, redness, warm, tenderness and lose of functions. The presence and severity of an injury based on the following guideline (Taunton JE, 2003):

Grade I: pain only after running.

Grade II: pain during running, but not restrict distance or speed.

Grade III: pain during running and restrict distance and speed.

Grade IV: cannot run due to pain.

2. Middle-age is defined as the volunteers aged 45-65 years old.

3. Elderly is defined as the volunteers aged higher than 65 years old.

4. Previous injury is defined as a history of running injury in the 12 months prior to the start of the study.

Expected benefits and applications

1. To realize the risk factors of running injury in middle-age to elderly Thai joggers.
2. To realize the incidence of running injury in middle-age to elderly Thai joggers.
3. Providing recommendation for the preventive strategies of running injury in middle age and elderly joggers.
4. Providing the preliminary data for further research.