

Menstrual Dysfunction in Hong Kong Athletes

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Introduction Since 1970's awareness that strenuous exercise can affect female reproductive function has increased. Many studies reported that athletic females experience irregular menstruation, amenorrhea and oligomenorrhea more frequently than non-athletic females but menstrual pain occurs less frequently in athletic females^[1,2]. Menstrual dysfunction, especially amenorrhea, has been linked to significant decreases in vertebral bone density and increases in injury prevalence^[3]. No study has been done on the prevalence of menstrual dysfunction in Hong Kong athletic females.

Purpose To investigate the prevalence of menstrual dysfunction, i.e. irregular cycle length, discomfort during menstruation, menstrual pain, in athletic and non-athletic Hong Kong females.

Methodology Fifty seven athletic females, recruited from the Hong Kong Sports Institute, and 42 non-athletic females, recruited from the universities, aged 18 - 30 years, were asked to fill out a questionnaire regarding their age at menarche, menstrual cycle length, discomfort during menstruation (i.e. fatigue, lower back pain, dizziness, nausea, vomiting), menstrual pain. Information like training years, decrease in training intensity during menstruation were also collected in the athletic female group.

Table 1 Sport of the athletic subjects (n = 57)

Sport	Number of athletic subjects
Badminton	7 (12.3%)
Cycling	1 (1.8%)
Fencing	15 (26.3%)
Karatado	1 (1.8%)
Rowing	6 (10.5%)
Squash	5 (8.8%)
Swimming	5 (8.8%)
Table Tennis	5 (8.8%)
Tennis	2 (3.5%)
Triathlon	2 (3.5%)
Windsurfing	1 (1.8%)
Wushu	7 (12.3%)

Results and Discussion A study done in Croatia reported menarche was significantly delayed in athletes who started physical activities before the onset of menstruation compared with non-athletes (13.8 ± 1.4 years vs. 12.6 ± 1.0 years, *p*-value < 0.001)^[1]. However, this is not found in athletic females in Hong Kong. There is no significant difference in average age at menarche in athletic females and non-athletic females (12.9 ± 1.3 years vs. 12.4 ± 1.0 years) as shown in Table 2. In addition, athletic females experienced irregular menstrual cycle (< 23 or > 35 days) significantly less often than non-athletic females (*p*-value = 0.005) (Table 2).

Table 2 Subjects' profile and menstruation characteristics

	Athletes (n = 57)	Non-athletes (n = 42)
Age	21.3 ± 3.4	24.5 ± 3.3
Age at menarche	12.9 ± 1.3	12.4 ± 1.0
Irregular menstrual cycle (< 23 or > 35 days)*	2 (3.5%)	9 (21.4%)
Menstrual pain	33 (57.9%)	31 (73.8%)

Table 3 Menstrual characteristics vs. Training intensity (n = 57) in athletes

	As usual	Decreased
Menstrual discomforts*	24 (42.1%)	17 (29.8%)
Menstrual pain*	18 (31.6%)	15 (26.3%)

Table 4 Menstrual characteristics: Elite vs. Non-elite

	Elite (n = 46)	Non-elite (n = 11)
Menstrual discomforts	34 (73.9%)	7 (63.6%)
Menstrual pain	29 (63.0%)	4 (36.4%)

* *p*-value < 0.05

Although there is no significant difference between athletic females and non-athletic females in discomfort during menstruation and menstrual pain, 73.8% of non-athletic females had menstrual pain and the prevalence in athletic females was only 57.9%. Similar result was found in another study^[1]. A significantly higher number of athletes train as usual and do not decrease training load during menstruation despite discomfort/ menstrual pain as show in Table 3. In addition, there is no significant difference in the occurrence of menstrual discomfort and pain in the elite (more than 5 years training) and non-elite (less than 5 years training) athletic female groups as shown in Table 4. Only two athletes (3.5%) reported to be amenorrheic (absence of three or more menstrual cycles).

Conclusion and Application There is no significant difference in age at menarche, menstrual discomfort and pain in athletic and non-athletic females in Hong Kong. Contrary to findings in other studies, Hong Kong athletic females were found to have irregular menstrual cycle less often than non-athletic females. Moreover, lower prevalence of menstrual pain was seen in Hong Kong athletic females which conforms with other studies. Although evaluation of menstrual pain is subjective, the results suggested benefit of regular physical exercise and the occurrence of menstrual pain. In conclusion, Hong Kong athletic females do not seem to be affected by menstrual dysfunction as much as other countries' athletic females. However, menstrual dysfunction, especially amenorrhea, has been linked to significant decreases in vertebral bone density and increases in prevalence of injury, like stress fracture. It is critical that menstrual dysfunction is reported in order to prevent injuries and long term loss of bone density.

References

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