CORONERS COURT
OF NEW SOUTH WALES

Inquest:	**Inquest into the death of Andrew HABIB**
Hearing dates:	31 July 2014; 15 August 2014; 17 February 2015
Date of findings:	6 March 2015
Place of findings:	NSW State Coroner's Court - Glebe
Findings of:	Deputy State Coroner HCB Dillon
Catchwords:	**CORONERS – Cause and manner of death** – Hypertrophic cardiomyopathy – Sudden death while participating in martial arts – Whether fit to participate – Whether subjected to choke hold – Whether choke hold caused or contributed to sudden death – Code of practice – Recommendation for guideline for pre-exercise risk assessment and management
File number:	2013/00055488
Representation:	Sgts S Ferguson and D Welsh (Coronial advocates) Mr M Gunning (counsel) instructed by Carters (Habib family)
Findings:	I find that Andrew Habib died on 20 February 2013 at the Westmead Hospital, New South Wales due to hypertrophic cardiomyopathy shortly after participating in a martial arts training session at a gymnasium.

Recommendation:	I recommend to the Minister for Fair Trading that, if this has not already been done, he consider liaising with Fitness Australia to develop, implement and reinforce a code of conduct for the fitness industry in NSW that would include the following recommendation. I recommend that Fitness Australia consider including in the National Fitness Industry Code of Practice it is currently developing or, if more appropriate, its guidelines for pre-exercise risk assessment and management, a guideline to the following effect: *If a prospective client is assessed under its pre-exercise screening tool as being at significant risk, the client should be referred to his or her medical practitioner(s) for clearance to undertake the proposed fitness program. The client should not be accepted into the program unless written clearance is received from the client's doctor to do so.*

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REASONS FOR DECISION

Introduction

1. Andrew Habib was a young man, only 20 years old, when he died following a martial arts training session at the gym he belonged. His death has caused enormous distress to his family and friends by whom Andrew was much-loved.

2. Andrew was the son of Souand and Georges Habib and brother of Gabran, Shaddie and Martin. He was of a large build, weighing approximately 155 kilos. He had a pre-existing genetic heart condition which results in a hardening of the heart muscle and is known to cause sudden and unexpected cardiac arrests in young people, especially under the stress of hard exercise.

3. Andrew was not known by his family to smoke, he was a social drinker and was not known to use recreational drugs. He was, naturally, concerned about his weight and general health and, some time before his death, had decided to lose weight and to improve his fitness. As part of his fitness regime, he joined the gym at which he subsequently collapsed and died.

4. His death has raised a number of questions relating to the fatal incident at the gym but more generally whether there is a need for a more structured approach to minimising risk to gym members.

The coroner's function

5. A coroner's primary function is to investigate sudden and unexpected deaths and, if possible, make findings as to:

   - The identity of the deceased person
   - The date and place of that person's death
   - The manner and cause of that person's death.

6. There is no controversy in this case in relation to identity, date or place of death.

7. The real questions in this inquest concerns the manner of Andrew's death – how did it death come about? What were the circumstances that led to his death?

8. The *Coroners Act* also enables a coroner to make recommendations that are necessary or desirable in relation to any matter connected with the death. Andrew's death has prompted me to make recommendations that I discuss below.

Nature of an inquest

9. An inquest is different from most other court cases. It is not a trial but an inquiry. The aim of these proceedings is to get a truthful, frank and full account of what happened to Andrew Habib. The purpose is to find someone to blame but to discover what factors contributed to Andrew's death and to learn anything that might prevent such a tragic outcome in the future.

The known facts

10. On the 30th November 2012 Andrew Habib attended his usual six-weekly appointment with his cardiologist of two and a half years, Dr Graham Sceats. Andrew had been diagnosed with Hypertrophic Obstructive Cardiomyopathy in June 2010 and had subsequently been prescribed Isoptin medication.

11. Hypertrophic cardiomyopathy (HCM) is one of the most common inherited cardiac disorders. It affects about 1 in 500 people and is the number one cause of sudden cardiac death in young athletes. Annual mortality is estimated at one to two per cent.

12. The chief abnormality associated with HCM is left ventricular hypertrophy (LVH), occurring in the absence of any inciting stimulus such as hypertension or aortic stenosis. The degree and distribution of LVH is variable: mild hypertrophy (13-15 mm) or extreme myocardial thickening (30-60 mm) may be seen.[1]

13. Cardiomyopathy is a condition in which the heart muscle becomes inflamed and enlarged and subsequently stretches and becomes weakened. If the muscle becomes too weak it may lead to heart failure. For this reason, patients are generally advised to lead a sedentary lifestyle or participate only in light physical exertion due to the pressure placed on the heart.

14. During his consultation with Dr Sceats, Andrew participated in a Stress Echocardiogram. Due to the poor results of the examination and Andrew's deteriorating condition Dr Sceats referred Andrew to another expert cardiologist, Dr Chris Semsarian who specialises in genetic disorders of the heart.

15. Dr Sceats intended that other management options should be explored. At the time Dr Sceats made Andrew aware of his condition and recommended that he abstain from strenuous activity until seen by an expert. Dr Sceats also made a follow-up appointment with Andrew for three months time to track the referral. Unfortunately, it appears that Andrew did not ever see Dr Semsarian.

16. Dr Sceats did not supply Andrew with a medical clearance certificate to participate in physical activity and one was not requested of him.

[1] http://lifeinthefastlane.com/ecg-library/hcm/ accessed 26 February 2015. This website is for emergency physicians and is a very useful source of medical information.

17. On the 11th February 2013 Andrew joined the Australian Top Team Martial Arts gym situated at 83 Wentworth Avenue, Wentworthville, located directly next door to the Wentworthville Police Station.

18. The gym is used as a training facility for Mixed Martial Arts style fighting with numerous martial arts disciplines being practiced at the gym, including Brazilian Jiujitsu and Muay Thai. At the time of Andrew's death the gym was owned and operated by husband and wife, Ashkan Mokhtarian and Azize Alpertonga.

19. Although he had previously participated in a form of martial arts called Hapkido for approximately four years, Andrew was a novice in Brazilian Jiujitsu, the form of martial arts he started training in at the Top Team gym.

20. Upon joining the gym, Andrew declared his heart condition in his application form. It was part of the contract when joining the gym that a new member also sign a waiver of liability and indemnity agreement. The contract was intended to indemnify the gym owners from liability for damages resulting from any injuries or harm that the new member suffered as a result of training at the gym.

21. No medical clearance certificate was requested of him, nor did he provide one but it seems that gym staff advised him to ease into training. In the weeks leading up to his death Andrew was leading what appeared to be a healthier lifestyle where he was regularly exercising and eating healthier foods, he had lost approximately seven kilos in the weeks leading up to his death.

22. On the afternoon of Wednesday 20th February 2013, Andrew attended the Top Team Gym where he participated in a Muay Thai martial arts session between 5.40pm and 6.30pm.

23. Immediately after this session at 6.35pm he participated in a Brazilian Jujitsu class. This class involved sparring with another participant, Viliami Ahofono for short intense rounds followed by periods of rest. According to a verbal account provided by Ahofono at the scene, he had restrained Andrew in a form of choke hold on the ground. Andrew succumbed to the restraint and "tapped out" indicating to his training partner that he had submitted. Ahofono released his grip on Andrew, then got to his feet and walked away to have a rest.

24. Although there appears to have been an account given to police that Andrew got up from the mat after his last bout, the weight of evidence suggests that he finished "rolling" and lay on the ground apparently exhausted. This is where, a short time later Mr Ahofono, martial arts instructor Arthur Reitzer and other witnesses checked on the deceased and discovered he was "out". The witnesses attempted to rouse the deceased but were unable to.

25. An ambulance was called and some of the gym members went next door to the Wentworthville police station and sought police assistance. Police immediately

attended and commenced CPR upon Andrew. An ambulance arrived at 7.48pm and confirmed he was in cardiac arrest. He was transported to Westmead Hospital with CPR continuing on the way to hospital. Unfortunately, however, he was never recovered and was pronounced dead at about 8.30 that evening.

26. An autopsy was conducted. Professor Jo Duflou confirmed the previous diagnosis of hypertrophic cardiomyopathy. He noted that the heart was markedly enlarged and that there was evidence of inflammation of the myocardium "well in excess of and different in type to that usually seen in cases of [hypertrophic cardiomyopathy] and more suggestive of a viral infection or a reaction to medication. It is possible that this inflammation increased the likelihood of an arrhythmia, and could explain why [Andrew] died at this time."

The issues

27. Andrew's identity, the date and place and physiological cause of his death are clear. The more difficult issues in the case relate to the manner or circumstances of Andrew's death. During the inquest, I have sought answers to the following questions:

- Was Andrew fit to participate in martial arts?
- Was he subjected to a "choke" hold during his last bout?
- If so, did the choke hold cause or contribute to causing his death?
- Ought the gym training industry adopt a uniform code of practice in relation to prevention or minimisation of gym injuries?
- If so, should the code include a requirement that if an applicant to join a gym informs the management that he or she has a serious physical condition, membership will not be granted unless the applicant produces a clearance from a qualified medical practitioner in writing?

28. I will deal with each of these questions in turn.

Was Andrew fit to participate in martial arts?

29. If Andrew's death is not sufficient evidence in itself to answer the question, the medical evidence made it very clear that Andrew was not fit to participate in martial due to his heart condition.

30. Evidence obtained from Andrew's doctors and from Professor Jo Duflou, the forensic pathologist who examined Andrew after his death, demonstrates overwhelmingly that Andrew's heart was fragile and, if subjected to significant stress, was likely to fail.

31. Whether he knew this or fully understood the risk he was taking by joining a martial arts training group is unclear. He certainly had been advised only to take light exercise. Unfortunately for him, he placed significant stress on his heart by undertaking two martial arts sessions on the night of his death.

Was Andrew subjected to a "choke" hold during his last bout?

32. Although police were unable to obtain a statement from Mr Ahofono, the available evidence suggests that he told police that he had applied a choke hold on Andrew during their bout. Presuming that account is truthful, he also told police that he had released Andrew after he had "tapped out", meaning that he submitted.

33. A person who can tap out has obviously not lost consciousness and was probably not subjected to a severe choke hold. Although Mr Ahofono was unavailable to give evidence because he had apparently left Australia to return to New Zealand, his home country, in my opinion, it is more probable than not that he had applied some form of choke hold during the bout.

Did a choke hold cause or contribute to causing his death?

34. Professor Duflou gave evidence on the last day of the hearing. He gave firm evidence that it was very unlikely that a choke hold had caused or made any significant contribution to Andrew's death.

35. His primary reasons for this opinion were (a) that the best evidence we had suggested that Andrew was still breathing at the end of the bout and thus had not been adversely affected by any choke hold that may have been applied during the bout; and (b) that his heart condition was so bad that any significant physical stress was extremely dangerous for Andrew. Professor Duflou said that, except in very rare cases, a chokehold would not cause or contribute causing death unless it was held until the person being choked ceased to breathe.

36. Professor Duflou was asked whether his opinion would be different if it was assumed that Andrew never got up from the mat at the end of the bout. He said that it would not make a difference.

37. He did not absolutely dismiss the possibility of some sort of effect on Andrew but he thought that it was highly improbable that a choke hold had resulted in Andrew's heart failure. I accept this opinion.

A code of practice to prevent or minimise gym injuries?

38. The fitness industry is not governed but its peak body is Fitness Australia. Fitness Australia states that its "mission" is "to lead and represent the fitness industry in pursuit of a fitter, healthier nation." Its key objectives are to provide a "high

standard of customer care, safety and service" and the promotion of "professionalism" in the fitness industry.[2]

39. While there is no NSW state code of practice for the fitness industry, Fitness Australia, according to its website, is developing a National Fitness Industry Code of Practice with which it hopes to replace codes of practice in those states and territories that have them (ACT, Queensland, South Australia and Western Australia).

40. A code of practice is generally more flexible and adaptive than a statutory regime but codes of practice can be given force by regulatory reinforcement. Given the rapid expansion of the gym industry and the growing popularity of martials arts, it is likely that at least some new clients will be at risk of harm.

41. Fitness Australia has also developed an Adult Pre-exercise Screening Tool and associated resources for use by gyms and fitness services providers. Importantly, the pre-exercise screening tool is intended to help fitness professionals assess and manage the health risks of their clients. If used properly and as designed, the tool should enable fitness professionals to identify high-risk clients and advise them to seek medical advice before undertaking strenuous exercise regimes. The questionnaire to be given to prospective clients advises the fitness professional that "If there are extreme or multiple risk factors, the exercise professional should use professional judgment to decide whether further medical advice is needed."

42. In my view, this may be insufficient guidance for exercise professionals who do not have medical training. Their experience and training may not be enough to enable them to exercise their professional judgment as their area of expertise is not medicine but exercise and fitness training.

43. In Andrew's case, the gym managers, Mr Mokhtarian and Ms Alpertonga had enough common sense to advise Andrew to start training gradually but their experience and expertise was insufficient to enable them to comprehend the risk that Andrew was running by joining the martial arts training squads. This is not their fault. They are not cardiologists.

44. With the benefit of hindsight, however, it can be seen that it would have been better if they had refused Andrew's application to join the gym unless and until he was given a clearance by his cardiologist to do so.

45. If hypertrophic cardiomyopathy affects 1 in 500 people in Australia, many of whom may not know it, gym memberships presumably include significant numbers of people at risk of sudden death.

46. Neither Fitness Australia nor the Minister for Fair Trading were notified of the inquest and therefore did not have a chance to contribute to this discussion. My

[2] See Fitness Australia website https://fitness.org.au/about_us.html accessed 26 February 2015.

comments should not in any way be taken to imply any criticism of either and I intend no embarrassment of either by these suggetions. My thinking on these issues has developed since the hearing concluded. If that causes inconvenience, I apologise for it but I have little doubt, however, that these findings will be of interest to Fitness Australia and the Minister. Fitness Australia's goals are admirable and the standards it is setting appear to be high. In particular, I commend Fitness Australia for working to develop a National Code of Practice for the industry. In NSW, I anticipate that the Minister for Fair Trading would have responsibility for working with Fitness Australia to develop, implement and reinforce a code of conduct for the fitness industry.

The code, risk and medical clearances

47. While the code is under development, Andrew's case suggests that Fitness Australia should be encouraged to consider tightening the risk assessment and management process in the light of the risk that his death highlights.

48. If, at the time Andrew joined Top Gym, guidelines had been available to the gym management and trainers alerting them to the risk of Andrew's heart failing suddenly under stress, it seems likely that they would have told referred him back to his cardiologist for medical clearance. Instead they appear to have been assured by Andrew that he was clear to exercise and to have accepted these assurances without further question. They had no way of knowing how accurate those assurances were.

49. In my view, if a gym client honestly reports information that shows that, under the screening tool categories, the client is at significant risk, especially if the risk is of heart failure, the default position in the risk assessment process should be that the client is referred back to his or her doctor(s) for clearance before an exercise regime is commenced. This would be safer for the client and a comfort for the fitness professionals who do not have the medical expertise to manage significant medical conditions.

50. I therefore propose to recommend such a course to Fitness Australia for inclusion in its National Code of Practice or its risk assessment and management resources, whichever is the more appropriate.

Conclusions

51. At 20, young people, especially young men, are prone to overindulge in risky activity because they do not have the experience and maturity to fully assess the risks they are taking. Learning from experience is part of that process of maturing. Neuroscientists tell us that the human brain does not fully mature until a person is about 25 years old. The last part of the brain to mature is the section which governs our ability to make judgments.

52. Sadly, in Andrew's case, as a result of an understandable but immature decision to undertake martial arts training, not only has his family lost a much-loved son and brother, but our wider society has lost a young man of great potential. His sudden and unexpected death is indeed tragic.

53. At the time he died, his heart was extremely vulnerable due not only to his congenital condition but also because, unbeknownst to Andrew or anyone else, his heart was inflamed by infection or a reaction to medication. The inflammation heightened the already high risk of sudden death if the heart was placed under stress.

54. Professor Duflou described discovering at the autopsy that Andrew's heart was in worse condition than he would have expected from his history. He could have died at any time. CPR and other attempts at saving his life were made very soon after his collapse was noted. There does not appear to have been any significant delay. Police officers arrived on the scene within a short time and continued to administer CPR until the arrival of an ambulance. Given the severity of Andrew's condition, however, it was impossible to resuscitate him.

55. I hope, however, that important lessons that may save other lives have been learned from his death. I also hope that Mr and Mrs Habib and their family will accept my very sincere condolences.

Findings: s 81 Coroners Act

56. I find that Andrew Habib died on 20 February 2013 at the Westmead Hospital, New South Wales due to hypertrophic cardiomyopathy shortly after participating in a martial arts training session at a gymnasium.

Recommendations: s 82 Coroners Act

57. I recommend to the Minister for Fair Trading that, if this has not already been done, he consider liaising with Fitness Australia to develop, implement and reinforce a code of conduct for the fitness industry in NSW that would include the following recommendation.

58. I recommend that Fitness Australia consider including in the National Fitness Industry Code of Practice it is currently developing or, if more appropriate, its guidelines for pre-exercise risk assessment and management, a guideline to the following effect:

If a prospective client is assessed under its pre-exercise screening tool as being at significant risk, the client should be referred to his or her medical practitioner(s) for clearance to undertake the proposed fitness program. The client should not be accepted into the program unless written clearance is received from the client's doctor to do so.

Magistrate Hugh Dillon
Deputy State Coroner for NSW