What health changes occur in Māori males after retirement from playing rugby league?
He aha ngā huringa hauora e puta ana i roto i ngā tāne Māori i muri i te reti mai i te tākaro i te rīki whutupāoro?

A thesis submitted to Massey University
in fulfilment of the degree of
Doctor of Philosophy

At Massey University, Wellington, New Zealand

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2018

Attestation of Authorship - Whakamanatanga o Kaituhitanga

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any degree or diploma of a university or other institution of higher learning, except where due acknowledgements are made.

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Trevor Tuwhakaea Clark

3rd August 2018

ABSTRACT

Māori male participation in rugby league is prolific at all levels in New Zealand; however rugby league has a high incidence of injury. The demands of the sport require players to be athletically fit, strong, and healthy during their playing careers. But does any health advantage remain once retired from participation?

This exploratory study is the first health study of Māori men who have retired from playing competitive rugby league in New Zealand. It uses mixed-methods within a Māori-centered approach producing research led by Māori that involves Māori, and is intended for the benefit of Māori. The mixed method approach creates both quantitative and qualitative data and evidence.

This study researched four groups of ex-players at increasing levels of engagement. One hundred and fifty-four Maori men were involved in the initial survey assessment. This survey was followed by a detailed analysis of 25 players who were assessed on multiple measures of health and physiology. This process was repeated 18 months later with 15 returning respondents and elaborated on (A) Physical well-being post-play; (B) Injuries experienced during play (through a retrospective analysis); (C) Self-assessed well-being; and (D) Change over time for a small group. Lastly 10 players took part in 'kanohi ki te kanohi' (face to face) interviews so the players could tell their own stories and their experience of the research in more detail.

As an exploratory study, this research sought to define the factors that contribute to the health status of Māori men who have retired from playing rugby league. The research

tested the use of mixed methods to generate quantitative data from physical and physiological testing, results from self-reported health factors, such as rates of smoking and bodily pain, and the qualitative information about the men's experiences in retirement and of the research experiences from semi structured interviews held kanohi ki te kanohi.

Four key findings come from the study;

1) The health disadvantage for Māori males is also seen in retired Rugby league players, in particular weight gain, pain;

2) Positive changes in repeated measures provide encouraging evidence;

3) Telling personal stories contributed significantly to the research by providing insight into the thinking and experiences of the participants -Whānau (family) was a strong feature in the stories from these men. Most importantly it confirms there is strong potential for intervention to improve and maintain health status for retiring and retired Māori rugby league players, and;

4) The presence of a Māori researcher can positively influence engagement with Māori-centered research.

Results yielded evidence of a positive reduction in body weight, improved cardiovascular fitness and increased motivation in some players simply through their participation in this research, possibly through the Hawthorne or observer effect.

This research explored a previously under-researched area and provided insight into Māori male health. It informs an on-going agenda of health related, rugby research by providing a needed Māori voice and evidence.

Preface - Kupu Whakataki

He piko he taniwha he piko he taniwha Waikato Taniwharau
Waikato (river) of a hundred chiefs at every bend a chief, at every turn a chief

Ko Waikato tōku awa (My river is the Waikato)
Ko Maungatautari tōku maunga (My mountain is Maungatautari)
Ko Waikato-Tainui tōku iwi (I am Waikato-Tainui)
Ko Ngāti Korokī-Kahukura tōku hapū (I also descended from Ngāti Korokī-Kahukura)
Ko Trevor Tuwhakaea Clark taku ingoa (My name is Trevor Tuwhakaea Clark)
Tēna koutou tēna koutou tēna ra koutou katoa (Thank you all)

Whakapapa (my ancestral connection)

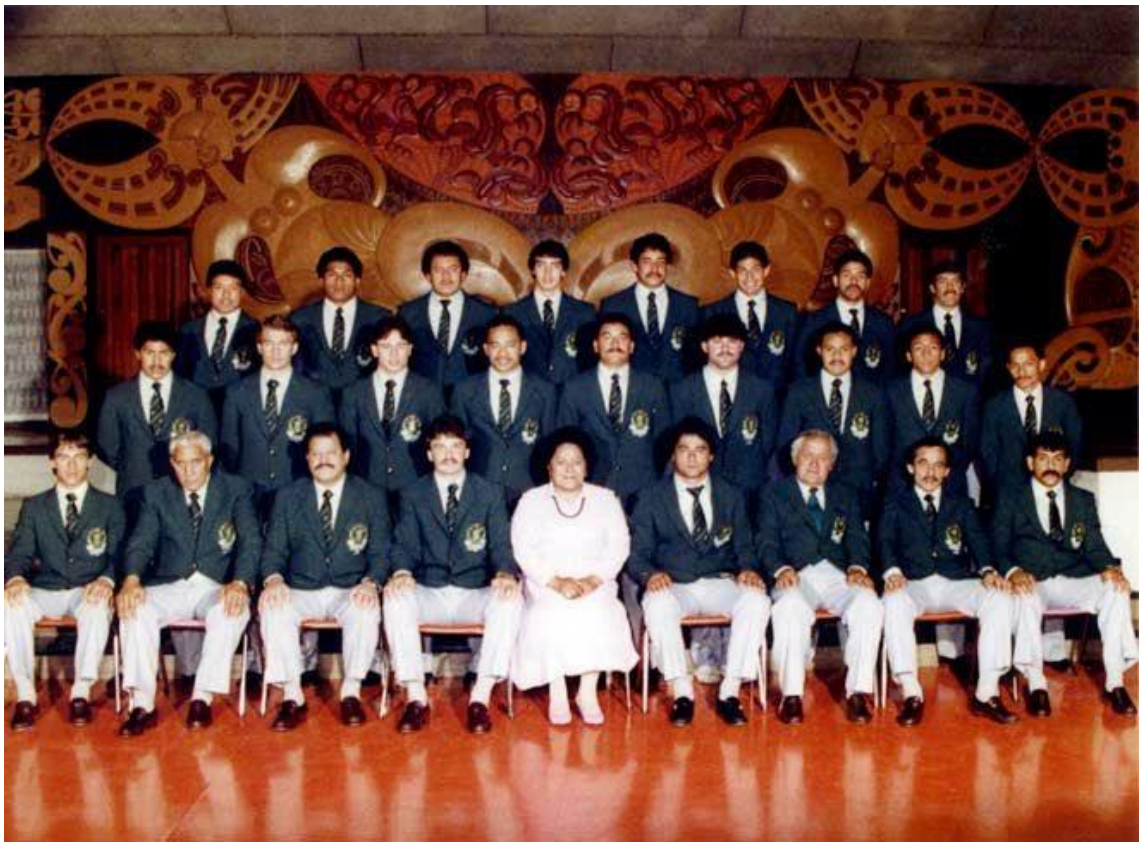
The essence of the famous Waikato whakataukī (proverb) serves to highlight the significance of the Waikato River and the strength of my people that live and work along its foreshore (from Taupō to Port Waikato – 425km). There are many chiefs (100) positioned along its pathway, so if you chose to travel along its path be respectful, or be prepared for challenges around every bend. The pull of the river (Waikato) always provided new challenges for me and this applied to everything I learnt throughout my life. There have been many challenges on the sports fields with every bend in the river (injury) requiring me to re-assess my physical effort in training. There have also been just as many off-field challenges (the loss of family) which have caused great sadness, but ultimately new strength and determination. I am proudly Waikato-Tainui and I know the strength and mana (pride) of my people have nurtured me on my journey from the Waikato to far-away places around the world. This thesis is my legacy, for my whānau (family), my iwi (tribal affiliation Waikato-Tainui) my hapū (tribal affiliation-Ngāti Korokī-Kahukura) and many friends from all over the world. It contributes new

knowledge to Māori health research and adds to a greater body of work surrounding the global health rugby codes study.

My Journey

I grew up in Hamilton and spent the first 21 years of my life there. I still call it my home and always will. I started playing rugby league at a relatively late age (16) unfortunately this coincided with one of the most devastating episodes in my life, with the loss of my father at the age of 42 from a heart attack. He only got to see me play a few times during that year but I know from talking to family and friends he was proud of what I had achieved in such a short time playing the game. From that moment onward I chose to dedicate my life to the sport in his memory. The loss of my dad is what drove me as I made my way through club (Melville) and representative (Hamilton) teams to eventually be adjudged the best and fairest player in the district aged 19.

One of the most important periods of my rugby league career came in 1983 when I was selected to play for the New Zealand Māori rugby league team. It was significant at the time as the team toured the United Kingdom later that year. During the tour (after my first game) I was asked by the Leeds Rugby League Chairman (Mr Joe Wareham) if I would be interested in turning professional and playing for Leeds RLFC. As you can imagine my world completely changed from that moment onwards.



Source: Richard Bolton collection (Team Trainer – Top right)

The Aotearoa Māori Rugby League team (2nd row standing two in from the right) on the historic 1983 tour to the United Kingdom with the late Dame Te Atairangikaahu (Māori Queen and Patron of AMRL). We returned home undefeated in all 8 matches played on tour. It was the start of my professional career having signed to play for the Leeds Rugby League Club whilst I was on tour, alongside Dean Bell (Kiwi Test Wing).

My Sport

From personal experience of playing (Melville, Huntly South, Hamilton, Waikato, New Zealand Māori, Leeds, Featherstone, Bradford and Taniwharau) and coaching (Melville, Jaradites, Petone, Wellington, New Zealand Universities, Auckland Warriors, Windsor, Erina) rugby league for 30 years, including 12 years as a professional player in the United Kingdom, I'm now coping with the effects of repetitive collision and training injuries suffered during my career in the sport. This has had a detrimental impact on my

current physical activity and overall health status. I suffered from chronic osteoarthritis in both knees and found it very painful to run and descend stairs. The condition was so bad I recently underwent two total bi-lateral knee replacements due to the condition, and complete ruptures of both anterior and posterior cruciate ligaments in both knees.

During my coaching career I have been witness to a multitude of player injuries across many levels of engagement (amateur to professional) and many of these were recorded in published research I also participated in. These injury investigations are ongoing and much of our current research is centred on concussion in sports such as; rugby league, Australian Rules Football (AFL), and rugby union. There is a growing concern within the research and sports medicine community that concussion may lead to debilitating consequences of both physical and mental health simply from participating in these sports. Not only have I had to endure the pain of suffering my own injuries, I also agonised over my two son's injuries through playing rugby league.

My Whānau (My immediate family)

I have two sons who were both born in Pontefract, West Yorkshire, England. My oldest son Regan (born 03/02/1991) retired from playing competitive rugby league at the age of 18 after breaking numerous bones in his body whilst playing. He was a standout player during his junior years winning multiple 'player of the year' awards in both rugby league and athletics. He was a natural athlete during his playing career, blessed with speed and the ability to score at will. He still follows and loves the game but for now he chooses not to play.

My youngest son Mitch (born 30/03/1993) is following in my footsteps and plays full-time in England previously with Doncaster, Bradford and Hull Kingston Rovers; he recently signed a two year contract from 2018 with Castleford Tigers in the Super League. He also played in Sydney for the Penrith Panthers winning the Holden Cup Grand Final in 2013 beating the New Zealand Warriors. He has represented the New Zealand Junior Kiwi Rugby League Team in 2013. He has also suffered a number of injuries including a broken arm and dislocated ankle (both requiring surgery). These injuries resulted in many missed days of both training and playing. He plays as a prop forward, probably the toughest position to play in the team and relishes the collision and challenge of every game.

My Research

During my playing career in England I was fortunate enough to complete a Bachelor of Arts (Hons) and a Master of Science degree at Leeds Becketts University, majoring in exercise physiology and sport psychology. It was my interest and passion for sport and health that led to the development of this study. After all that has happened throughout my playing and coaching career and subsequently my own sons' careers I wondered if the same consequences had befallen other Māori players retired from a lifetime of playing rugby league. This exploratory research project was designed to support the implementation of mixed methods within a Māori-centered approach. My intention was to build a body of new evidence to provide future direction to support players, coaches and health professionals. It is intended that this project will add new knowledge to the field of Māori health research with specific reference to improving health outcomes for male Māori rugby league players who have retired from playing the sport.

Acknowledgements - Nga Mihi

I would like to thank my primary supervisor Professor Chris Cunningham for his patience and faith in me to fulfil one of my lifelong goals.

To Dr Doug King my secondary supervisor and lifetime friend and colleague who inspired and motivated me to become the person I am today. We've travelled many roads together and I look forward to many more.

I would also like to thank Dr Marg Wilkie for her support during the final push toward the try line. It proved invaluable during the examination process. Her Ngāti Porou and Ngāpuhi mana (pride) shone through and served as a constant reminder of the fight needed to succeed.

The New Zealand Health Research Council's financial and political support was immense during tough times during a very scary and sometime gut-wrenching journey, but one well-travelled by so many Māori PhD students who cannot see the roses let alone smell them. I have the deepest respect for the organisation and its leaders.

I'd also like to acknowledge the Tainui Māori Trust Board for their unwavering support. I am Waikato-Tainui which makes the significance of this project especially important.

> E rite ahau ki te whakawhetai ki te Tainui Māori Trust Board mo to ratou tautoko, puta noa i toku haere PhD. Ko te he huarahi pakeke, engari te pai

utu te utu. Titiro atu ahau ki hoatu hoki ki taku iwi, Tainui, ki ngā ākonga i te katoa i runga i te ao.

To my mum Rita who has been my most ardent supporter from day one, often heard shouting from the side-line (during my playing days) – "get off my son" (most often), you have always been a constant which I have treasured every day. To my brothers, sisters, aunties, uncles, cousins and friends it was your support that kept me going when I could have easily thrown in the towel (like that was ever an option for a Tuwhakaea Clark).

A special mention to my beautiful wife Christine who would keep asking me every day "have you worked on your PhD" this was motivation enough to make that commitment to complete the project….and keep her quiet. To my two son's Regan and Mitch, this is as much for you as it is for me. Another challenge to aspire to because all I want is for you both to be proud of me as I am of both of you. You are both my biggest and best achievements in life. To Hollie and Monique, thank you for sharing your lives, it makes your mum and me very happy and content as a family.

To all the players I have played with and coached you know the journey. It is a tough road to tread rugby league, it is never easy, no matter what the score. The thousands of tackles given and taken will never diminish the love for the game we all know so well. Lastly, but not least to all the participants involved in this study who became my rugby league whānau, thank you for being there and giving your time so willingly and unselfishly I will always treasure your contribution to this discovery.

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