



The Research Process:

Lakatos (1970 p173) stated that "The generation of proof or evidence for or against a complete theory should not serve to close the issue but allow the theory to be modified or grow." He describes the process of trying to find proof for a procedure as a "long process of fumbling and trying again and again." He presented theories as opportunities for growth in knowledge and called them "research programmes". This is a good description of real life research!

The process of enquiry developed through this partnership starts with a problem or puzzle raised by the NCFC physiotherapists (and other medical/sports science staff). This leads to the identification of a topic requiring further investigation. These puzzles are offered to students, who each select an area to direct their research studies. There is then a three-way discussion (as described by Mason, 2002), involving the NCFC staff, the UEA supervisor (Jon Larner) and the student, in order to identify a more specific research question (which becomes their dissertation title). The supervision process is supported by periodic meetings with all parties to review progress. It culminates with a presentation of the findings back to the Norwich City medical team after the dissertation has been submitted and marked. There is an emphasis on highlighting implications for practice and/or recommendations that can be used by Norwich City to drive improvements in practice. Further areas of investigation are then identified and flagged up for future students to review. As such the students can continue to be part of developing research programmes.



Research Partners:

Professional Practice - Norwich City Football Club Academy

Norwich City have been a dominant feature in English football for many years. Founded in 1902 the club has spent several decades competing in top-flight professional football, either in the Premier League or the Championship. The Academy has a proud tradition of producing the very best in home-grown talent and continues to be at the forefront of youth development in this country through its engagement with the Premier League's new Elite Player Performance Plan. The club has a strong reputation for supporting and developing its young players and this is officially recognised by Category One status, awarded by the Premier League. Category One status is extremely hard to achieve and takes real commitment from the club. Any football academies that have this status will be able to demonstrate the highest quality standard of coaching, equipment, facilities and strategic development that you can expect to find. Category One football academies invest a great deal of resources to maintain their status.

The sports medicine team are an essential part of the team providing care for young elite athletes at the Norwich City Academy. Engagement with evidence-based practice is critical to ensuring that the medical management of youth footballers is appropriate, effective and efficient. However, despite a wealth of available evidence informing the management of the adult elite sporting population, the Norwich City Academy physiotherapy team have identified that there is a limited body of quality research evidence available to support their practice with elite young athletes. Professional football in particular would benefit from developing this evidence-base further and partnership with a local university is recognised as a great way of bringing together people with the skills and time to link theory and practice together, where it counts... in the workplace. The team have been working with HSC lecturer Jon Larner since 2011 to identify key topics to drive this agenda forwards.

Academia - The UEA School of Health Sciences

The programme is a 2 year accelerated Master's educational programme leading to eligibility to register with the HCPC to practice as a physiotherapist. Students enter the programme with a BSc degree at 2.1 grade or above. Former degrees may be in any relevant scientific area, but many of our students come from a sports science or sports therapy background. Lecturer Jon Larner is the Course Director for this programme.

Physiotherapy Pre-reg. Students:

Early in their programme at the UEA, students are offered the chance to join a member of faculty in identifying and answering a specific research question. This usually relates to work being done by the academics within the school, but may take the form of a literature review, service evaluation, secondary data analysis or actual empirical research.

By the end of the second year we expect students to:

- Be equipped to contribute to a culture of enquiry within their profession and more widely in health and social care.
- Have had direct experience of the design and delivery of research so that they can make a significant contribution to developing and delivering the research agenda.
- Submit a 10,000 word research report (research dissertation).

Research Topics:

The following list identifies the target of research highlighted through this partnership process to date:

MSc Dissertation Titles - submitted Nov. 2012:

- "Hydration and fatigue in elite youth athletes - A structured literature review." - Michael Burroughs.
- "What relationship exists between fatigue and injury in elite youth sporting populations - A structured literature review." - William Kenton

MSc Dissertation Titles - submitted Nov. 2013:

- "Intrinsic risk factors for ankle sprains in football - A structured literature review" - Rose Glendinning
- "Does musculoskeletal growth that occurs during adolescence increase the risk of injury in male adolescent footballers? - A structured literature review" - Louise Turner.

MSc Dissertation Titles - submitted Nov. 2014:

- "How does mental toughness and hardiness influence injury prediction in academy football players? - A structured literature review" - Elizabeth Randall
- "Is there a link between somatotype and injury in football? - A structured literature review" - Lauren Piper

MSc Dissertation Titles - submitted Nov. 2015:

- "The use of calculations based on age at peak height velocity for predicting growth and maturation - A structured literature review" - Martynas Ziilinskas.
- "Evaluation of the effectiveness of the King-Devick test for assessing concussion - A structured literature review" - Edward Colborn.

MSc Dissertation Titles - submitted Nov. 2016:

- "The effects of biological maturity and training loads on injury rates in youth football players and the implications for bio-banding - A structured literature review" - Jack Wilce
- "The effectiveness of the adductor squeeze test in preventing groin injury in academy level football players - A structured literature review" - Andrew Thomas

MSc Dissertation Titles - for submission Nov. 2017:

- "A literature review to explore resilient personality variables that influence the stress-injury model" - Liam Addison (OT student)
- "Evaluation of the impact of targeted interventions to reduce the incidence of hamstring injuries in the elite academy population" (secondary data analysis) - Tom Ulset
- "A longitudinal case report on the potential effects of a three year programme of interventions on ankle sprain incidence in a Premier League football academy" (secondary data analysis) - Lucian Enescu

MSc Dissertation Titles - for submission Nov. 2018:

- "A literature review investigating the use of the Reactive Strength Index on neuro-muscular fatigue in academy football players" - Jake Yeowell
- "A literature review investigating the relationship between vitamin D levels and injury" - Daniel Harris

Norwich City F.C. Physiotherapist

"The relationship between Norwich City Football Club Academy and the University of East Anglia School of Health Sciences is a mutually beneficial partnership that enables students to undertake projects that are evidence driven and have the possibility of effecting real change on a clinical level within an elite sporting environment.

As a medical department with an ethos of ensuring our clinical interventions are evidence-based wherever possible, the student projects give us an opportunity to both support local physiotherapy students with their dissertation projects and to also direct these projects to research areas of particular interest to our department.

Students will often examine the current evidence-base underpinning a particular area, as well as in some instances analysing current or previously collected data as part of the project. Over the last 5 years we have managed to continually develop projects with hopefully the final step to academic publication of an article in the next few years.

As a department we have benefitted in a number of ways. The key outcomes for us are collaborative working between an academic institution and our club and creating relationships with local students. Some students go on to undertake placements of work within our academy medical department after graduating. Ultimately the main benefit is the opportunity to adapt and constantly evolve our treatments / interventions via the research undertaken as a part of the projects".

Damien Bowyer
Senior Academy
Physiotherapist
Norwich City F.C.



MSc Graduate Physiotherapist

"I was fortunate enough to be a part of the first set of research dissertations to take place with NCFC and the UEA. I seized the opportunity to participate in an exciting project which offered to widen the scope of physiotherapy practice in the sport and exercise medicine arena. The link with highly specialised practitioners in their field provided us with access to first hand knowledge and expertise at the forefront of musculoskeletal medicine which I believe carried over in to our overall learning experience at the UEA.

In addition, the actual implementation of our research was witnessed, in the uptake of recommendations from the findings, into the daily practice at NCFC. This was hugely rewarding and provided that extra motivation in seeking to provide accurate, and importantly, applicable research for clinical practice. This link between research and practice has stayed with me in my studies and career to date helping develop critical clinical reasoning skills.

Furthermore, and in a selfish manner, the opportunity provided me with a platform upon which I have been able to move in to the sports medicine field. Through the link developed with the staff at NCFC I was fortunate enough to take a job within the Academy upon qualification and have continued to work in professional sport ever since. Along the way I have even had the chance to implement my own research to guide hydration strategies at another professional football Academy. Without the opportunity provided me by the UEA and NCFC I highly doubt I would have made the step in to professional sport at such an early stage in my career and would not be in the role I currently occupy. It was well and truly worth the 10,000 words and seemingly endless hours of research".

Research Partnership Impact:



Michael Burroughs
London Scottish RUF
MSc Physiotherapy
Graduate, 2012



Rose Glendinning
Norwich City FC
MSc Physiotherapy
Graduate, 2013

MSc Graduate Physiotherapist

"My research dissertation looked at risk factors for ankle injuries in elite football. Having access to a huge pool of NCFC academy data allowed me to see injury trends in the academy football environment. It was this data that led me toward my research title. It gave a real purpose to my writing. Now working at Norwich City, it is part of my role to monitor these patterns and manage the injury risks for our players. My dissertation was a window into the role of physiotherapy in injury prevention. This is a great aspect of the job that I did not necessarily consider when I first started my training.

Regular meetings with the academy physiotherapists helped build an understanding as to how what I was reading could be applied in practice. Presenting back to the medical team, although daunting, gave me the opportunity to share the information I had collated. In turn, the team were able to share their thoughts on the practical application of my findings, as well as areas that they had been reading into. This enabled me to become actively involved in a research community. It also gave me the opportunity to form invaluable professional connections. Completing my dissertation was the first step in pursuing my career in sports physiotherapy.

I am now able to guide a UEA student on their dissertation, as an extension of the research I did 4 years ago. I hope that I can pass on the knowledge I have gained in the process. It is very exciting to be on the other side of the door with regards to these projects and the impact that they can have on our clinical practice at the football club".

UEA Physiotherapy Lecturer

"The partnership between Norwich City and the UEA school of Health Sciences has allowed students to undertake research projects that are driven by real-life questions which they can relate directly to practice. By engaging in supervision with both UEA faculty and Norwich City staff, students are able to demonstrate both academic and professional development. They are able to see the potential impact of their research activity first hand, and become part of a research community in a real-life setting. In presenting back their findings to the Norwich City medical team they are able to play an active part in this community by discussing the potential implications of their findings. Some even gain employment in this field after graduating".



Jon Larner
Lecturer and
MSc Course Director
UEA

COULD THIS TYPE OF RESEARCH PARTNERSHIP WORK FOR YOU?

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