Evaluation

# Written Summary:

Cutting-edge technology is being adapted to aid in the recovery and training of the National Basketball Association (NBA) players faster than ever. Today, traditional methods such as icing and massage are being replaced by cryo-therapy and compression systems – treatments that are claimed to have improved effectiveness. However, while the technology in the NBA is advanced as ever, risk of injury has increased among young players – many in their first year of playing. This issue prompted me to study the link between modern recovery, training routines and the occurrence of non-contact knee injuries.

I employed an extensive range of research processes including:

* Internet research
* Book research
* Interviewing experts via telephone and emails
* Watching videos
* Accessing library database

The outcome was in the form of a report. It was found that the adaption to modern routines produced notable improvements in individuals, however, was mostly uncorrelated with injury rates on a league-wide scale.

150 words

# E1 – Evaluation of research processes (activities undertaken):

Conducting Internet research in the beginning was invaluable. From reading short articles and journals, I was able to narrow down the question to training and recovery routines and their relationship with risks of non-contact knee injuries in professional basketball players. Internet research was especially useful at improving my knowledge of medical terminology, abbreviations and most importantly, it has helped me to identify the most important risk factor for non-contact knee injuries – biomechanical stress accumulated from improper techniques during the deceleration phase. A limitation with the Internet is that many sources are poorly written, and too unreliable to be considered adequate information. Thus, it was challenging to distinguish satisfactory sources amongst thousands of webpages. In response to this problem, I gathered information from academic articles published on governmental databases such as the National Centre for Biotechnology Information (NCBI) as much as possible. This was advantageous as scholarly articles are peer-reviewed before publication; thus, their statements are most likely reliable and can add to the credibility of my outcome. In summary, Internet research was highly useful and has produced the majority of the key findings.

Book research was exceedingly helpful, as it has provided information regarding preventive exercise routines including strength, flexibility, neuromuscular and sports-specific training. Based on book research, I was able to determine the types of training routines to discuss in the outcome. Compared to Internet research, book research was considerably more successful as the short time spent on reading and analysing books have produced equally adequate information. The reason is that books are generally supported by primary evidence and reviewed before publication, making them more reliable than Internet sources, which anyone can write and edit. A limitation is that many books, for instance, the Blackwell Science sports medicine textbook series, although used to be a scholarly source intended for university-level education, is now outdated by more than 20 years. Because of this, books may be inaccurate as new information, such as recently proposed theories wouldn’t be included. Consequently, the reliability of book research is moderately affected. This limitation is overcome by comparing statements in the book to recently published sources to make sure that the old information is still accurate to this day.

Watching YouTube videos prompted me to discuss ground reaction force (GRF) and explain its effect on one’s body. Initially, evaluating the reliability of YouTube videos was difficult as very few content creators posted a list of references cited in the videos. Nevertheless, after comparing the videos to other sources, I found a few credible YouTubers that produce reliable, informative videos, namely Dr Brian Sutterer and Cornell Jenkins. An advantage of YouTube videos is that the information is usually a concise, accurate summary based on primary researches conducted by renowned health organizations. Therefore, watching them has broadened my understanding in a short amount of time. In summary, YouTube videos have effectively produced high-quality information that’s crucial to my outcome.

While the written interview did not produce substantial results, the phone interview with Dr Andrew Potter is a valuable primary source and has prompted me to discuss the notion of the kinetic chain. Since the interview was through a phone conversation, I was able to ask for clarifications from Dr Potter and reply with follow-up questions to further explore a topic until there’s no uncertainty in my interpretations of his answer. The interviewee, Dr Potter specializes in sports injuries and has been a medical officer with the AFL, WBFL, and SANFL since 1980. His response regarding the phenomenon of overuse injuries in young athletes was slightly biased. However, I didn’t base my discussions entirely on Dr Potter’s response. Instead, I compared his replies to work by others to find similarities in their statements, furthermore, only quoting parts that are backed up by supporting materials, thus validating his credibility and maintaining a high level of accuracy in my work. In conclusion, the phone interview, although not being central to my work, has contributed a significant part in developing the outcome.

# E2 – Evaluation of decisions made in response to challenges/opportunities

In the early stages of my research, I didn’t receive any reply to my request email. In response to this challenge, I decided to write as many requests as possible to physiotherapists and doctors located in South Australia instead of to professional athletes or world-renowned physiotherapists who reside interstates or overseas. This strategy was quite effective, as before I received no response from sending 30 or more requests; after I adopted this approach, two people responded and agreed to my interview within the same week. Looking back, I think this decision to approach local interviewees was highly beneficial, as interviews expand the diversity of primary sources in my outcome, as well as introducing new concepts, vocabularies, and opinions based on personal experience that would otherwise be unknown to me. This, in turn, enables me to comprehend and discuss complex, however essential findings, such as the kinetic chain in the outcome.

Initially, it was difficult to receive replies from interviewees as the tone conveyed through my request email did not show respect and courtesy. To counteract this problem, I decided to split the original request into two parts. In the first e-mail, I introduce myself and ask if they are willing to participate in an interview. After receiving their consent, I e-mail my list of questions. This approach seemed more friendly and respectful of others’ choices. After adopting this format, I received replies from 4 interviewees. Overall, this decision was very helpful as I was able to, through using interview responses, validate the information I had an unclear understanding of; for instance, the relationship between single-sport specialization and overuse injuries. Additionally, by asking for their opinions in the interview, I was able to identify and eliminate unnecessarily confusing knowledge in the outcome, namely the eccentric and the concentric phase. Essentially, this decision has improved the quality of the outcome and made it easy to understand.

During the phone interview with Dr Andrew Potter, I was unable to summarize and note down the key points in time, as parts of the call were inaudible due to poor connection. In response to this problem, I decided to record the conversation and transcribe the recording. Looking back, this has proved to be the easiest method to document a spoken interview, because I could playback the recording and interpret inaudible sentences. In doing so, I could take a long time to comprehend Dr Potter’s speech, rather than depending on on-the-spot quick note-taking to record information, which often leads to disjointed notes that are unideal for forming substantial conclusions. Overall, recording the conversation was an advantageous decision, as I was able to, through replaying the recording, create a concise summary of key findings that accurately represent Dr Potter’s speech from the 13-minutes long conversation, so I don’t misinterpret his communications. This, in turn, adds accuracy and reliability to the outcome.

# E3 – Evaluation of research outcome:

The research outcome discusses the causes of non-contact knee injuries, specifically how the adaptation to modern training and recovery routines has affected the risk of knee injuries in NBA players. The outcome doesn’t qualify for academic purposes, as it’s mostly a collection of knowledge found on the Internet, that’s previously known by the public. Despite not contributing to the existing knowledge in sports science, my outcome is, however, a systematic, logical explanation of the importance of proper biomechanics to one’s performance and athletic health. It answers the question in identifying the link between modern training, recovery routines and the occurrence of non-contact knee injuries. Therefore, the outcome is valid.

The outcome could assist those who don’t have access to a professional struggling with minor knee pain resulting from overuse injuries. Through my research, they can learn accurate, unbiased information about sports biomechanics, thus improving jumping techniques and avoiding harmful movements in their sports activities. Doing so could avert the occurrence of recurrent knee injuries caused by poor biomechanics and help improve recovery. Aside from this, teenagers and children who don’t have pre-existing injuries can also benefit. By reading my research outcome, they can learn proper biomechanics at a young age and develop good habits when running and jumping, and thus preventing overuse injuries later in life.

A diverse range of evidence is utilized to substantiate the findings. These include many primary sources, such as research articles, interviews, photographs as well as secondary sources such as published books, websites and YouTube videos. Most sources used are created by well-known, credible organizations or individuals who have extensive experience in orthopaedics or sports science. Thus, it can be said the evidence used to substantiate findings are high-quality in this context, however not sufficient for university-level research.

Despite that the research question posed many limitations and challenges in the research process, it was valuable as I have become knowledgeable at sports injuries and developed literacy skills from communicating with interviewees. In conclusion, the research outcome is believed to be an accurate, valid, and a reliable explanation of the link between training, recovery routines and non-contact knee injuries in professional basketball players.

1492 words