

An evaluation of Biokinetics internships

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MA Human Movement Science

Dissertation submitted in fulfilment of the requirements of the degree Master of Arts in
Human Movement Science in the Faculty of the Humanities at the University of Zululand

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December 2014

Abstract

Few evaluations of internships have been carried out in the health professions in South Africa. Those that have been undertaken are in the field of medicine, physiotherapy and clinical psychology. This research seeks to fill that gap. The study used a mixed methods approach utilising both qualitative and quantitative research methods which is consistent with convergence model of triangulation design. This process evaluation allowed an evaluation of Biokinetic Honours and internships, and how they functioned at a specific moment in time. Descriptive statistics and a chi-square test were used to analyse the quantitative results and Thematic Content Analysis (TCA) was used to analyse qualitative data. Results, both quantitative and qualitative indicated that the male and female Biokineticists (N = 47, SD = 3.12) who participated in the study were satisfied with their Biokinetic Honours and internships years. The results also indicated that supervising Biokineticists (N = 20, SD = 6.9) were satisfied with their interns. Qualitative results generally underpin results from the quantitative data and, while the majority of the results are positive, there were some problem areas. These related to poor supervision, long working hours, poor pay and perceived exploitation of interns, interns not completing the guideline number of evaluations in each category and poor teaching practices at Honours level. The following recommendations were 1) Review Biokinetic Honours programmes; 2) The structure of Biokinetics programmes be reviewed; 3) Community Service is introduced; 4) The possibility of introducing specialization in the field; 5) Internships should be in the public and private sector; 6) Supervising Biokineticists should undergo supervision training; 7) Cultural transformation needs addressing in the field; 8) Working conditions must be reviewed; 9) Selection processes for Honours should be reviewed and 10) More aggressive marketing of the discipline.

Keywords:

Internship; Supervising Biokineticist; Focus group; Scope of Practice; HPCSA; BASA

Acknowledgements

I would like to thank my supervisor Dr. Grace for her input and help and the Department of Biokinetics and Sports Science for giving me the opportunity to study further. I would also like to thank my parents, and Frances for their support through the years.

Declaration

This dissertation is a presentation of my original research work. Wherever contribution of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. This dissertation serves as fulfilment of the requirements for the MA degree in Human Movement Science within the Department of Biokinetics and Sport Science in the Faculty of Science and Agriculture at the University of Zululand.

Christopher Robert Nel

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In my capacity as supervisor, to the best of my knowledge this is correct.

Dr J. Grace

.....

List of abbreviations

The following key definitions are listed below.

“**A Biokineticist**” is a person registered as such under article 32(1) (a) of the Medical, Dental and Supplementary Health Service Act, 1974 (Act No. 56 of 1974).

“**Biokinetics**” is defined as the Act of the profession concerned with preventive health care, the maintenance of physical abilities and final phase rehabilitation, by means of scientifically-based physical activity programmes.

“**Approved training facility**” means a health establishment, laboratory, healthcare centre, or any other institution which is approved by the board for the purpose of internship training.

“**BASA**” Biokinetics Association of South Africa.

“**Board**” means the Professional Board for Physiotherapy, Podiatry and Biokinetics established in terms of section 15 of the Act.

“**HPCSA (PPB)**” is the Health Professions Council of South Africa (Physiotherapy, Podiatry and Biokinetics division)

“**Internship**” means clinical practice performed after successful completion of a recognised Honours degree in Biokinetics according to the policies and guidelines pertaining to the training of intern Biokineticists adopted by the Board;

“**Qualification**” means a qualification as prescribed under section 24 of the Act for registration of Biokineticists; and

“**The Act**” means the Health Professions Act, 1974 (Act No. 56 of 1974).

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CHAPTER 1: INTRODUCTION

- 1.1 Introduction
 - 1.2 Problem statement
 - 1.3 Aims of the study
 - 1.4 Research propositions
 - 1.5 Study de-limitations
 - 1.6 Structure of the dissertation
 - 1.7 Summary
-

1.1 Introduction

According to the Biokinetics Association of South Africa (BASA, 2013), negotiations started in Potchefstroom in 1969 for the official recognition of Biokinetics. In August 1977 a formal letter was drafted by heads of Human Movement Science departments from various universities. The letter requested that the South African Medical and Dental Council include Biokinetics in the register of Allied Health Professions. However, it was not until 1983 that Biokinetics was officially accepted, with full registration status, in the South African Medical and Dental Council register for the professional board for medical scientists. In 1998 Biokinetics, together with Physiotherapy and Podiatry, was grouped together to form the professional board for Physiotherapy, Podiatry and Biokinetics (PPB). In 1999 the former South African Medical and Dental Council underwent a transformation process and was renamed the Health Professions Council of South Africa (HPCSA).

The Biokinetics profession is inter alia concerned with promoting the health of individuals as, in contemporary society, lack of physical exercise has caused many health risks. This lack of exercise has resulted in the deterioration of the body's functions causing an increase in hypokinetic disease (Grenfell, 2010).

On the 14th October 1994 the Minister of Health, on the recommendations of the Medical, Dental and Supplementary Health Service Act (Act No. 56 of 1974), gave the following definitions describing the scope of the profession of Biokinetics (the full scope of practice can be found in appendix 1).

A Biokineticist - is a person registered as such under article 32(1) (a) of the Medical, Dental and Supplementary Health Service Act, 1974 (Act No. 56 of 1974).

Biokinetics- as defined by the Act is the profession concerned with preventive health care, the maintenance of physical abilities and final phase rehabilitation, by means of scientifically-based physical activity programmes.

Scientifically-based physical activity programmes - means specific and individual-oriented physical training programmes based on the individual's physical condition. These programmes should be compiled and supervised.

Final phase rehabilitation- is the period or phase in the rehabilitation process in which physical activity and physical conditioning constitutes the primary therapeutic modality.

Essentially, Biokinetics is concerned with the promotion of physical abilities, prevention of certain ailments and physical selection with associated procedures for instance, evaluation, rehabilitation and the functional assessment of an individual. Biokinetics is thus a relatively new scientific discipline which focuses on disease prevention and rehabilitation by using scientific based exercise prescription, individualized for the patient's specific needs. Presently, the discipline is recognised as being separate from physiotherapy and exercise science in South Africa (Grenfell, 2010).

The selection process for students in Biokinetics is rigorous and there are only a limited number of places available at universities. After completion of the academic component of the programme there is much competition to gain internships in the best recognised Biokinetics practices. During their final year of training the candidate has to register as a student-in-training with both the Biokinetics Association of South Africa (BASA) and the HPCSA. The professional academic preparation programme entails a two year period of internship. The first year is in the student's final post-graduate (Honours) year of study and the second year is conducted at an accredited Biokinetics Practice / Centre, as an internship, under the supervision of a registered Biokineticist (BASA, 2013).

The training to which an individual is exposed in their internship year, before registration as a Biokineticist, prepares them for work in a number of allied health-related fields. The scope of the occupation is primarily dependent on the entrepreneurial initiative of the individual (BASA, 2013), as Biokinetics does not form part of the public health care system except in the National Defence Force in South Africa. Biokineticists however, are part of the multi-disciplinary private health care

sector and research indicates that this sector provides health insurance coverage to some 7 million people in the country (Harrison, Bhana & Ntuli, 2007).

Research conducted by Moss and Lubbe (2011), indicates that each year around 150 students graduate from the 12 institutions accredited by the HPCSA to offer training in Biokinetics. In 2009 there were 799 Biokineticists with active practice numbers registered with the HPCSA. The distribution of these practices indicated that the majority were located in Gauteng (46%) and the Western Cape (22%) with the remaining (32%) dispersed throughout the rest of South Africa. According to BASA (2013), there are 284 Biokinetics practices registered throughout South Africa, of these only 71 are accredited to train intern Biokineticists. The Minister of Health has, in terms of section 61(1) and section 24 of the Health Professions Act, 1974 (Act No. 56 of 1974), and in consultation with the HPCSA, made regulations relating to the registration of Intern Biokineticists pertaining to an internship year being no longer than 12 months and specifying requirements if any deviations are made from that time frame (See appendix 1).

The 71 practices which are registered to train Biokineticists are allowed to employ more than one Biokineticist however, only 2 interns can be supervised by 1 registered Biokineticist (Moss & Lubbe, 2011). It is up to the registered Biokineticist (within the accredited practice) whether or not they decide to take interns on a yearly basis. The HPCSA board for Physiotherapy, Podiatry and Biokinetics (PPB) stipulates that practices must obtain accreditation for the number of interns that can be trained and that practices wishing to train interns need to reapply every 3 years to ensure that they stay registered to train interns.

Interns are evaluated periodically during their internship year using form 170 available from BASA (2013). These allow the supervisor to evaluate the clinical exposure and experience of the intern during their internship year according to professional guidelines. If an intern within a practice does not see the required number of patients for each category he or she must get permission to see patients elsewhere so this can be remedied.

To date, there has been no published research conducted on Biokinetics Internship programmes. However, in other health disciplines some research already exists evaluating various areas of internship programmes. In this regard a qualitative study, of the experience of clinical psychology interns, found that they experienced stress and apprehension as well as isolation from social

contexts during their internship year (Kuhn, 2008). The author further stated that interns that took part in the research experienced a sense of not-belonging, due to the existing workplace culture which did not readily accept them. The participants in the study noted a sense of achievement at the end of their internship. They also stated that support from peers, colleagues and family was important as well as mentorship from their supervisors.

Avraamides (2008), in an experiential study of the experience of an industrial psychology intern, found that positive experiences were associated with understanding specific narratives associated with the workplace. The author suggested that understanding these organisational narratives empowers interns which facilitate the process of self-growth which in turn assists the process of fitting in to organisational culture.

In a study by a homeopathy intern, data was collected which intended to provide clarity on what an internship in homeopathy should entail. The quantitative results were used to make recommendations regarding the design of homeopathic internships in South Africa. Only 6% of the sample had ever had a family member that needed to consult a homeopath. When it came to more specific questions about the profession and training of homeopaths many of the respondents did not provide adequate or appropriate answers. It seems that there was a general lack of knowledge about what training in the profession required. In qualitative questions, the sample perceived homeopathy to be a legitimate scientific profession which the public do not always recognise because there is not enough information disseminated about the occupation. It was felt that the profession should be properly and more aggressively promoted in South Africa (Chella, 2007).

A quantitative study in South Africa of 275 psychology interns reported that 60% of the sample were satisfied with their professional development and training experience (by implication 40% were not as happy). The researchers noted that comprehensive coverage of relevant professional development topics was associated with greater overall satisfaction. Multiple linear regression results suggested that perceptions of preparedness for various post-internship positions were associated with satisfaction at the level of professional internship training experience (Kluck, O'Connor-Pennuto & Hartmann, 2011).

In many professions, internship is associated with negative experiences for instance, Leham and Quick (2011), looking at the experience of intern teachers in the United States of America (USA) were surprised at how often interns described their place of work as one that had an oppositional culture, plus an *us* and *them* mentality (Fiore & Joseph, 2005). The authors concluded that an overall lack of communication between supervisors and interns resulted in problems in the workplace as interns were not sure of rules or boundaries, this led to feelings of resentment.

It appears that there are some gender differences in terms of male and female behaviour during internships generally for instance, Kardash (2000) reported that female research interns had less conceptual abilities than males. In a health related study Elzubeir and Rizka (2003), found that female medical interns were less likely than males to report unethical educational practices during their internship year. In a study conducted by Bartels, Goetz, Ward & Carnes (2008), female medical interns, during their residency year, were less likely to show assertive behaviour for clinical scenarios than males.

The majority of the studies conducted on internships in the field of health professionals are qualitative in nature. Many of these are studies of the perceptions and attitudes of interns to their internship year and all note stress, anxiety and some positive experiences (Avraamides, 2008; Chella, 2007; Kuhn, 2008). Local and international studies evaluating the internship of other disciplines in health related professions are limited and none can be found evaluating any parts of the Biokinetics internship. This indicates that there is a gap in knowledge that the present research aims to fill.

1.2 Problem Statement

While research has been conducted by researchers affiliated to other professional boards governed by the HSPCA, for instance, psychology (Kluck et al. 2011), in respect of interns' evaluation of their internship year no literature can be found in the field of Biokinetics. With no data or feedback available from Biokineticists on their evaluation of their internship year there is no barometer to gauge the internship process as they perceive it. Feedback from interns would establish if practices are following recommended guidelines from the HPCSA (PPB) and determine if they are treated fairly in terms of workplace practices. It would help the HPCSA (PPB) and BASA formulate guidelines for better practice and also provide information about if interns are appropriately trained.

To add depth to the study views from Biokineticists supervising the interns will be sought in order to gain their views on interns' readiness, training and suitability for their work.

Furthermore, very few evaluations of internships have been carried out in the health professions in South Africa. Avraamides (2008), evaluated the experience of Industrial Psychology interns, Chella (2007), evaluated homeopathy interns experience and Kuhn (2008), looked at the experience of intern Clinical Psychologists. There is thus a lack of material on evaluating internships generally in the health professions in South Africa. As noted until this research was completed there have been no evaluations carried out on Biokinetics internships. This research seeks to fill that gap.

1.3 Aims of the study

The following aims of the study were formulated:

To investigate how Biokineticists evaluated their Honours year in preparation for their internship year.

To investigate how Biokineticists evaluated their internship year;

To gain insight into supervising Biokineticists evaluation of the intern Biokineticist.

1.4 Research propositions

The research does not have a random sample, where the sample has been drawn from a normally distributed population, consequently parametric statistics cannot be used and hypotheses cannot be tested. Non-parametric statistics are used in the study and a chi-square test is utilised to find if there is a statistical association between specific variables. This allows for the development of a proposition to see if there is a causal link between the two (Curwin & Slater, 2005). The study thus has the following research propositions.

Biokineticists are satisfied with their course experience during their Honours year;

Male and female Biokineticists are equally satisfied with their course experience during their Honours year;

Biokineticists are satisfied with their internship year experience.

Male and female Biokinetics interns are equally satisfied with their internship year;

Accredited supervising Biokineticists are satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year.

Accredited supervising male and female Biokineticists are satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year.

1.5 Study delimitations

The sample group is limited to all Biokineticists who completed their internship before or in 2014. Participants must have either a BA, B.Comm Honours or BSc Honours degree in Biokinetics, have completed their 12 month internship at an accredited training facility and be registered as a Biokineticist with the Health Professions Council of South Africa, Physiotherapy, Podiatry and Biokinetics division (HPCSA, PPB).

The sample of supervising Biokineticists will be drawn from supervising Biokineticists who work in the 71 accredited practices in South Africa and who attended the BASA Life through Movement, International Conference in Stellenbosch 2014.

1.6 Structure of the dissertation

The dissertation is structured in the following manner.

Chapter 1: Introduction - introduced the research topic and gave the problem statement, aims, study delimitations and significance of the study.

Chapter 2: Literature Review - gives an overview of relevant literature pertaining to the evaluation and experience of internships generally both internationally and locally.

Chapter 3: Research Methodology - specifies the research methodology for the study and gives the research design, sampling strategy and data collection methods and mode of analysis. It also notes the ethical guidelines and permission for the study.

Chapter 4: Research Results and Analysis - presents the research results both quantitative and qualitative. Quantitative data is presented in the form of frequency tables, figures and the chi-square statistic. The results of the study propositions, in terms of a chi-square statistic, are also presented. Qualitative data is presented in the form of themes gained through an analysis of the data with Thematic Content Analysis.

Chapter 5: Discussion of Research Results – this chapter presents a discussion of the research results.

Chapter 6: Research Conclusion and Research Strengths, Limitations and Recommendations – the final chapter gives the research strengths, limitations and recommendations for future research.

1.7 Summary

The first chapter presents the research problem statement, aims, propositions, de-limitations and structure of the dissertation.

CHAPTER 2: LITERATURE REVIEW

- 2.1 Introduction
 - 2.2 Overview of programme evaluation
 - 2.3 Reasons for programme evaluation
 - 2.4 Types of programme evaluation
 - 2.5 A review of relevant literature relating to evaluation of internship programmes outside of the health professions
 - 2.5.1 Qualitative research relating to the experience of interns and evaluation of internship programmes outside of the health professions
 - 2.5.2 Quantitative research relating to the experience of interns and evaluation of internship programmes outside of the health professions
 - 2.6 A review of relevant literature relating to the evaluation of internship programmes and/or the experience of interns within the health professions
 - 2.6.1 Qualitative research relating to the experiences of interns and evaluation of internship programmes in the health professions
 - 2.6.2 Quantitative research relating to the experiences of interns and evaluation of internship programmes in the health professions
 - 2.7 Summary
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2.1 Introduction

As there was no available literature on the evaluation of Biokinetics internships, appropriate literature relating to the evaluation of internships and the experience of interns was sourced from health related and other professions. The literature in the review evaluates internships in ways which considered relevant to the present study. Literature on programme evaluation is also included so that clarity is obtained on what programme evaluation seeks to achieve. A rationale for the use of specific questionnaires used in this investigation is also presented.

2.2 An overview of programme evaluation

Woolcock (2009) states that programme evaluations of any type are a relatively recent phenomenon and were particularly popular in industry in the late 1980's and into the next two decades. The author further notes that programme evaluation is used as a systematic appraisal of projects, policy or programmes, in order to assess their proficiency and effectiveness, in government departments, industry, Non-Governmental Organisations (NGO's) and academe. The rationale for programme evaluation is that stakeholders in any project need to know if their programme is having the

proposed effect. For instance, both tertiary institutions and organisations who employ interns and who are designated professionals in a specific field need to know if the programme is cost-effective. They need to know if the outcomes are positive for both the institution and the prospective employer or if there are any unintended outcomes. Individual's, often researchers, who evaluate programmes need to know if the programme goals are being fulfilled.

Although programme evaluations are generally thought to be quantitative in nature Woolcock (2009), asserts that a mixed methods approach is more often used today, utilising both qualitative and quantitative research methods and techniques. He asserts that this gives a more holistic overview of the phenomena under scrutiny and gives a more in-depth account of the programme under investigation.

The evaluation of academic programmes has become necessary, particularly those that train professionals of any kind for instance, medical doctors, nurses, lawyers and accountants. O'Neill (2010), states that programme evaluation in academe should extend beyond content and teaching methods and take into account a universal picture of the learning environment. This includes curriculum organisation, student support, and the physical environment, learning resources and staff attitudes. The author further suggests that the Course Experience Questionnaire (CEQ) developed by Ramsden (1991), is the most commonly used quantitative method as it is a standardised questionnaire which contains scales on appropriate workload, good teaching and clear goals and standards. The CEQ was successfully used to evaluate undergraduate tourism management courses in Greece (Stergiou & Airey, 2012). It was also used in a pilot study of final year students taking hospitality, leisure, sport and tourism degree courses at a tertiary institution in Oxford in the United Kingdom (Downey & Muller, 2011). However, in itself it is critiqued as being too narrow to measure the whole spectrum of student experience, thus it is often used with other non-standardised questionnaires covering a more complete range of student experience. O'Neill (2010), notes that there are many non-standardised questionnaires used for programme evaluation which offer evaluation of broader fields than the CEQ.

The use of non-standardised questionnaires only in quantitative studies has problems related to validity and reliability, which the present study sought to avoid. The current research therefore used the CEQ (which is a standardised), with non-standardised questionnaires eliciting demographic and practical data (relating to Biokinetics) adapted from information on non-copyrighted questionnaires used by the Health Professions Council of South Africa (PPB) and High Point University (USA).

Non-standardised questionnaires were piloted to test for validity; internal reliability was established using Cronbach Alpha.

Qualitative methods of programme evaluation, used together with quantitative methods, include interviews, focus groups and structured discussions (O'Neill, 2010). The author also notes that when using any of these methods, which are very useful for gaining in-depth knowledge and insight, it is important to remember that respondents speak within a specific socio-cultural and economic context.

Woolcock (2009) suggests that the evaluation of academic modules take place yearly as well as at the end of the programme (if for instance, a 2 or 3 year programme) so that continuous assessment takes place. Furthermore, a programme should be holistically evaluated, be all-inclusive and evaluate as many areas as possible. The present research therefore used both qualitative and quantitative methods of programme evaluation using survey questionnaires, a focus group and phone interviews in evaluating Biokinetics internship programmes.

2.3 Reasons for programme evaluation

According to Woolcock (2009) the reasons for any programme evaluation are to a) demonstrate that the programme is effective to stakeholders; b) improve the implementation and effectiveness of any programme; c) be able to manage resources inherent to the programme; d) justify or document the reasons for, or accomplishments of, the programme; e) show or identify reasons for keeping the programme and its present or needed funding; f) confirm the need for increased funding for the programme; g) ensure that the programme follows ethical guidelines that satisfy all stakeholders; h) state both the positive and negative effects of a programme; i) document the programme development and confirm that it can be replicated. If a programme cannot be replicated it is unlikely that it has components that work together in a consistent and coherent manner thus needs standardizing to ensure that it is sustainable. Currently, in South Africa there is a move to evaluate all programmes at university level as those that do not have enough students registered at each level (minimum number 30) makes the course not financially viable (Personal Communication, Assistant Registrar University of Zululand, 2012).

2.4 Types of programme evaluation

O'Neill (2010) reports that there are different types of programme evaluation which are broadly included by the following categories:

- Formative evaluation – this is used when a new programme is introduced and identifies the needs it should satisfy;
- Process evaluation – which looks at the different parts of the programme, how they work and how the programme is applied;
- Impact evaluation – examines the extent to which the programme has negative and positive components and how the various constituents of the programme function.
- Outcome evaluation – this looks at both the long and short term programme outcomes and results.

In terms of the present study the evaluation is a mixture of impact and outcome evaluation. The Biokinetics interns will give feedback which will indicate how their internship works which will include both negative and positive components. Outcome evaluation will indicate the Biokinetics internships programmes short term results which, in turn, will give an indication of the long-term outcomes (fundamentally, if they are well enough trained). The Biokineticists supervising the interns will also indicate if they think the intern is fulfilling his or her internship adequately. This will indicate if the academic programme the interns trained in had the desired outcomes at internship level.

2.5 A review of relevant literature relating to evaluation of internship programmes outside of the health professions

The following is a review of literature, which uses qualitative research methods that relates to how internships are evaluated or experienced by interns who work outside of the health professions.

2.5.1 Qualitative research relating to the experience of interns and evaluation of internship programmes outside of the health professions

Leham and Quick (2011), in a qualitative study which evaluated administrative interns experience of their internship in the United States of America (USA), reported that the technical skills of interns had been researched but that the impact the internship had on an individual had not been widely investigated (in many fields). The study looked at the perceptions and beliefs of interns and analysed how they had changed by using content analysis to interpret data in journals they were requested to keep, which were handed in 6 times during the year. The most critical finding was the negative tone the interns used to evaluate the culture they had to work in, describing it as oppositional. The authors concluded that as demands were very high on administrators in organisations internships should be re-evaluated so that interns could have a more positive workplace experience.

Cord, Bowrey and Clements (2010), investigated accounting students' reflections on a regional internship programme in Australia. The paper is reflective in nature and gave an in-depth evaluative description of the accounting students' experience. The researchers suggested that structured experiential learning programmes or internships are necessary for students to be able to practically apply their knowledge. The students' in the study were encouraged to take part in reflection-based assessments, using an e-learning framework, which was described as both creative and flexible. Findings suggest that this type of programme adds to workplace preparedness and understanding of the needs of any given profession. It was also concluded that this type of internship is constructive in terms of community and professional body expectations of what a professional accountant should be.

Chen, Hu, Wang and Chen (2011), evaluated the positive and negative effects of the internship experience on the behavioural intentions of college students in Taiwan. The study was a qualitative one using semi- structured interviews. The study used a small purposive sample of 10 students who had completed their studies. The researchers noted that no previous studies in Taiwan had looked at the effects of internship on behavioural intentions. Study results indicated that students evaluated their experience by reporting whether the challenges they had encountered in their respective organisations had impacted on whether they wanted to complete their studies or change careers. It was also noted that individuals, who had completed their internships and who were dissatisfied with

their internship year, tended to complain more to colleagues within the organisation and friends and family outside the workplace.

According to Gillim (2006), effective Human Resources internships in the USA are those which are successful from both the interns and organisations perspectives. The researcher used a theoretical framework, social media and his own experience as a Human Resource intern to compile the research. The report suggested that successful interns should have had some previous work experience, have a strong academic record and be involved in leisure or recreational activities outside of the workplace. The author concluded that a successful internship programme must attract a diverse range of interns and that the best should be retained by the organisation on completion of their internships. Furthermore, it was suggested that organisations have a duty to properly evaluate candidate interns through proper selection and evaluation processes. This may include interviews and psychometric testing, as well as short trials in the workplace. It was also recommended that companies who keep the best interns as employees must ensure they are appropriately groomed for a prosperous future.

2.5.2 Quantitative research relating to the experience of interns and the evaluation of internship programmes outside of the health professions

The following is a review of literature which uses quantitative research methods and relates to how internships are evaluated or experienced by interns who work outside of the health professions

Kardash (2000), evaluated the perceptions of undergraduate interns (in the USA) and their faculty mentors in an academic environment using a quantitative approach. She used a self-report survey with 57 participants. The study was used to evaluate if 14 learned research skills were improved by undergraduate interns' involvement in research. The interns filled in a survey pre and post survey which requested information relating to the 14 taught skills. After the pre-test the intervention (or teaching of skills) took place the research concluded that some skills enhanced both the students and lecturers overall perceptions of their ability. Female interns were significantly less likely to understand concepts than male interns. It was also reported that they were less able to increase their ability to formulate hypotheses, after the intervention, than male interns.

In Zimbabwe, Bukaliya (2012), researched the potential benefits and challenges of internship programmes in an Open and Distance Learning Institution. He noted that previous studies suggested

that there was a major gap between what the graduates' institutions produced and what the marketplace wanted. The author suggested that more employers should assess internship programmes so that practical skills can be evaluated. It was also noted that academic institutions and organisations should have a more symbiotic relationship so that graduates are produced that meet market related demands. The study revealed that interns had numerous challenges such as lack of supervision and non-disclosure of important workplace information, without which they could not do their work competently. It was also noted that many permanent employees regarded the interns as a threat, as they were less academically qualified, thus they ignored the interns or were not co-operative and actively withheld information from them.

Schoffstall (2013), looked at the benefits hospitality students in the USA gained by working (part time work or in selected internships) when completing their studies. The study used a quantitative approach using web-based surveys to complete the research. The researcher made comparisons between those who had work experience as interns and those who did not. It was concluded, on the basis of the results, that there were statistically significant differences between students who worked as interns when they were completing their studies and those who did not. Those who worked while completing their studies were significantly more likely to find work than those who did not. One of the major implications of the study was that stakeholders, both in academe and industry, should look at providing more internships to students who are completing their studies.

Du Pre and Williams (2011) researched undergraduates' perceptions of employers' expectations using a quantitative approach with a self-report survey. They noted that many researchers identify the fact that internship experience is what many potential employers look for when recruiting new members to their workforce. It was reported that employers in the USA would rather recruit individuals who have served an internship in their industry of choice than those with no, or very limited, work experience. Overall, the findings of the study indicated that curricula, in academic programmes, must be market related and that institutions should have programmes that help graduates find work.

Chella (2007), evaluated the first formal homeopathic programme in South Africa at Durban University of Technology (previously Technikon Natal) in 1989. She conducted a retrospective study to gauge M.Tech homeopathy graduates perceptions and opinions of their internships. The research was seen as important as it was aimed at providing clarity on past internships. The author specifically wanted to find out what internships in the past entailed when requirements were not

statutory, or legislated for so that recommendations for future internships could be made. The qualitative data that was collected as part of the investigation was used, with other results, to make specific recommendations to the HPCSA pertaining to the design of homoeopathic internships in South Africa.

2.6 A review of relevant literature relating to the evaluation of internship programmes and/or the experience of interns within the health professions

The following section reviews literature which used a qualitative research methodology pertaining to internships and the experience of interns in the health professions.

2.6.1 Qualitative research relating to the experience of interns and evaluation of internship programmes in the health professions

Avraamides (2007), used auto-ethnography to make sense of and evaluate her industrial psychology internship, qualitatively. During the period she was an intern her treatment made her feel unsuccessful and a failure, thus her internship was endured but not enjoyed. The author notes that the organisation where she completed her internship should not have taken industrial psychology interns however, in spite of this she completed the requirements which enabled her to register as an Industrial Psychologist in South Africa. The thesis is a reflexive account and evaluation of her journey through an internship that it seems both she, and the organisation, were not well-prepared for. At the end of her story (dissertation), in which used poetry and drawings to relate her experience, she managed to gain insights through reflecting on her narrative which enabled her to *fit in* to the organisation. Her psychological lack of preparedness for the internship was an issue for which she was not equipped. This was, in some part, due to the Masters programme she was involved in not preparing her properly for the workplace and lack of proper selection processes at the organisation where she interned.

An investigation into the experience of a clinical psychology interns was undertaken by Kuhn (2008), in South Africa. The author noted that an internship is critical in the development and training of Clinical Psychologists. She noted that in the internship year individuals make the transition from student psychologist to professional psychologist. A phenomenological approach

was used and emphasis was placed on the participants' experience of their *lived world* or day-to-day existence. The researcher used informal, unstructured interviews which were transcribed and from which she drew themes. Several themes arose out of the data which were named as, the value of the learning experience, a sense of apprehension, the importance of support, the importance of supervision and mentorship and a sense of not belonging and isolation.

Sein and Tumbo (2012), undertook a qualitative investigation into effective medical training at a hospital in North – West province, South Africa. A purposive sample of 7 doctors was interviewed at the completion of their internships. The study discovered that the key factor involved in effective training during internship for medical doctors was good supervisors who supervised effectively and adequately. Another factor identified was that interns needed to have the opportunity to gain appropriate experiential learning. The environment that the interns worked in was also identified as a major factor, if the environment was not conducive in terms of support systems, physical infrastructure training in internships was not optimum. Interns also needed an equitable workload and remuneration. Recommendations included creating an appropriate (conducive) working environment with the aforementioned types of support.

2.6.2 Quantitative research relating to the experience of interns and evaluation of internship programmes in the health professions

The following section is a review of literature which used a quantitative research methodology pertaining to internships and the experience of interns in the health professions.

Daugherty, Baldwin and Rowley (1998), investigated learning, satisfaction, and mistreatment during medical internship in the USA. The research utilised a quantitative approach using a cross-sectional survey design. The sample was randomised and represented 10% of the interns in the USA (n = 1773). The survey was undertaken as anecdotal concerns about non-conducive working environments, plus long hours and poor pay had been noted in different contexts. The outcomes the researchers wanted to measure were what contributed to an intern's satisfaction and their perceived mistreatment regarding bullying and discrimination. The response rate was high with 1227 (72%) of surveys being returned. Results indicated that most interns were moderately satisfied with their first year of internship. Senior residents were noted as contributing most to their learning as well as specific medical cases. The majority of interns (93%) reported one or more incidence of

mistreatment, with the majority of female participants reporting some form of sexual harassment (63%). The authors concluded that residents during their first year of internship reported significant problems.

Research into intern evaluation strategies in family medicine residency education was undertaken by Yates (2013). The study used a mixed methods approach using surveys and telephone interviews. However, the major form of data collection was the use of a survey which collected quantitative data. The research was undertaken as family medicine interns were perceived to have deficiencies both social and technical which were not always noted by their supervisors at first. A questionnaire was sent to all the hospitals in the USA who offered internships in family medicine. Out of 439 programmes 220 responded (response rate 50%). Results included that interns stated that evaluation of programmes was necessary in order to improve them. Only 6.4% of the programmes that took part in the study were doing intern evaluations extensively. Less than a third of the programmes considered their interns personalities and learning styles, and almost no programmes evaluated skills such as typing and mathematics (0.4%). These skills are necessary for report writing and knowing how to work out the correct dosage of medicine. The research concluded that baseline intern evaluations are very useful but very few of the programmes who participated in the research do them. It was also found that residency (or internship) programmes do not share information with other hospitals offering similar programmes. It was recommended that programmes could benefit from this type of information sharing and that frequent evaluations take place.

Naylor, Norris and Williams (2014), looked at demographic differences in the placements of physiotherapy interns and their final marks for their internship. They found that gender and age made no difference but that those, from other than White backgrounds, were awarded significantly lower marks. The author's concluded that more research was required into this significant relationship to determine the success of ethnic minorities in the profession of physiotherapy in the United Kingdom (UK).

An investigation conducted by Bennet (2008), into maintaining the quality of clinical education in physiotherapy at the University of Birmingham in the United Kingdom (UK), noted that government demands to increase the number of physiotherapy students had led to problems in internship placements. The research looked at how new internship programmes could be found without undermining the quality of teaching and learning. Action Research utilising both

questionnaires and interviews was used and the data triangulated to ensure a holistic overview of the phenomena. A new model of facilitating learning was developed during the course of the research. The creation of *learning teams*, where supervisors and interns worked together to develop and share knowledge worked well. This meant that more physiotherapy interns could be accommodated without compromising the quality of the offering. The author concluded that priority should be given to how learning impacts on the personal and professional development of the physiotherapist.

Erasmus (2012), conducted a meta-analysis of literature on medical internships in South Africa. The author reported that chronic deficits in terms of staffing in South African hospitals leads to medical interns and community service doctors being sleep-deprived. A review of recent literature revealed that these interns and community service doctors work more than 200 hours overtime in one month. The research also noted that overtime of up to 80 hours is unpaid but interns and community service doctors don't complain as there is an unspoken threat that they might not qualify if they do not. The author noted that this treatment of highly qualified professionals is degrading and sleep deprivation is cruel. Further, she reports that no other professional interns in the country are subject to this level of exploitation. The research recommends that this type of abuse must be challenged constitutionally, unpaid overtime must be stopped and intern shifts be limited to a maximum of 16 hours. Further, it was recommended that the Human Rights Commission of South Africa investigate the conditions of internship and community service for medical doctors in the country.

Pillay and Johnston (2011), used an e-mail survey to determine Clinical Psychology interns' experience of their training and placements. One hundred and fifty surveys were e-mailed to intern and 55.3% returned. Results suggest that just over a third (34.9%) of interns felt prepared for the challenges of their internship and 31.3% felt their training was only partly relevant. However, 53% of respondents did feel their training was adequate and prepared them properly. One third of the respondents were dissatisfied with their internships and felt they would like to emigrate after the completion of their training. It must be noted that this portion of the sample were more negative about all aspects of their internship. Of the entire sample only 12% completed their mini-masters dissertation during their internship year (meaning that 88% had to delay their community service while they finished their dissertation). The sample did not agree with a proposal by the HPCSA (Psychology division) that the required dissertation should be finished in the internship year. The majority of the sample was keen to further their studies and complete a PhD on completion of their training and remain in the country.

Elzubier and Rizk (2003) explored interns' attitudes and perceptions towards academic integrity. Ninety three point two percent (93.2%) of respondents felt that academic misconduct was immoral and 88.6% reported that they would not be involved in any wrongdoing. Plagiarism was seen as less serious than other issues such as misuse of power. In this study female students were significantly less likely ($p=0.002$) to report any academic or educational misconduct than males. Bartels et al. (2008), in a study that look at medical interns ability to direct patient care, found that female medical interns reported more gender related issues and displayed less assertive behaviour in clinical scenarios.

2.7 Summary

A review of literature on the evaluation of internships in any field indicated that very little research has been undertaken on the topic generally. In the field of health professionals it was even harder to find literature related to evaluation of internships. In South Africa there is a particular lack of research on internship and, what could be found, was mostly in the field of medicine, physiotherapy and clinical psychology. The research that was undertaken documents many negative experiences associated with internship such as non-conducive working conditions, lack of preparedness for work-life, isolation bullying, discrimination and exploitation. However, research in the field of medical internships that, were anecdotally reported as unsatisfactory, concluded that most medical interns were satisfied with their internships. Recommendations were made regarding how to better these conditions but no positive actions were taken. Interestingly, the Action Research conducted on physiotherapy interns was constructive, in that it applied a new model of learning while making further recommendations.

CHAPTER 3: RESEARCH METHODOLOGY

- 3.1 Introduction
 - 3.2 Research design
 - 3.3 Description of the study population
 - 3.4 Description of the sample
 - 3.4.1 Survey samples
 - 3.4.2 Focus group and phone interview samples
 - 3.5 Test protocols
 - 3.5.1 Survey questionnaires
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 - 3.7.2 Qualitative data
 - 3.7.3 Reliability, validity and bias
 - 3.7.3.1 Reliability, validity and bias for the quantitative surveys
 - 3.7.3.2 Reliability, validity and bias for the qualitative data
 - 3.8 Ethical consideration
 - 3.8.1 Informed consent
 - 3.9 Summary
-

3.1 Introduction

This chapter gives a description of the research design used in the study which includes sampling, the survey instruments, data collection, data analysis and interpretation plus ethical procedures used in the investigation.

3.2 Research design

The study utilised both qualitative and quantitative research methods which is consistent with a triangulation design. The convergence model of triangulation design was used, as it allows for real-time collection of qualitative and quantitative data, which can then be analysed separately (Creswell& Plano-Clark, 2007). This allowed process evaluation which according to O'Neill (2010) permits evaluation of different parts of a programme, in this case Biokinetic Honours and

internships, and how they function at a specific moment in time. Triangulation of research methods also gives a more holistic picture of the phenomena under investigation (Creswell & Plano-Clark, 2007).

3.3 Description of the study population

The study population was participants who were registered with the HPCSA (PPB) and who had completed their internship training. While the survey was anonymous, participants were required to supply their BK/BKS and HPCSA (PPB) Biokineticist registration numbers to authenticate their registration with the HPCSA. Supervising Biokineticists were drawn from the 71 practices accredited to train intern Biokineticists who attended the BASA Life through Movement International Conference in Stellenbosch 2014. At this conference the organizers were unable to provide the number of registered Biokineticists attending the conference were subsumed under the categories health professionals, allied health professionals or students. Although repeated requests were made, an up-to-date list of registered Biokineticists with the HPCSA and BASA, was not forthcoming the sample size in relation to the actual population size could thus not be calculated.

3.4 Description of the sample

3.4.1 Survey samples

The first sample was drawn from Biokineticists who had completed their internship before or in 2014, and who would thus be in a position to evaluate their internships, the sample is thus purposive in nature. Participants were male or female and of any age. Purposive sampling was also used for the collection of data from supervising Biokineticists in accredited practices. Supervising Biokineticists must have been linked to practices that were accredited to train interns.

3.4.2 Focus group and phone interview samples

The focus group was made up of a purposive sample of individuals who completed their internship before or in 2014 and who lived in the urban and/or peri-urban areas surrounding Johannesburg. This geographic location was deemed appropriate as Gauteng has the most Biokinetics practices in

the country (BASA, 2013). Invitations to participate in the study were sent to those who completed their internships in both urban and peri-urban areas of the city. The first six respondents who replied that they were available to participate in the focus group were used.

Originally, it was decided to have a focus group in the Western Cape in the Cape Town urban area however, the logistics for instance, the costs of travel and gaining a venue for this undertaking proved too difficult. However, 4 phone interviews with 2 female and 2 male Biokineticists, working in that area, using a snowball or convenience sample, was utilised which is an approach consistent with triangulation of research methods. Due to time and monetary constraints it was thought 4 respondents would be appropriate however, it was decided that if responses to questions were markedly different more phone interviews would be undertaken, until saturation of responses was reached. Saturation of responses means that interviews are stopped when the same responses are made, by different parties, to interview questions (Welman & Kruger, 2001). As responses were not markedly different this was not necessary. The use of the snowball sampling method allowed the researcher to phone a Biokineticist who worked in the area and ask for names of other Biokineticists who could be contacted for possible participation in the phone interview.

3.5 Test Protocols

3.5.1 Survey questionnaires

The survey protocol was made up of standardised and non-standardised questionnaires. A standardised survey compiled by Ramsden (1991), the Course Experience Questionnaire (CEQ), was used to evaluate Biokineticists overall experience of their Honours in Biokinetics course. As no standardised questionnaires exist for evaluating all aspects of Biokinetics internships a questionnaire was designed which was adapted from those used by the HPCSA (PPB) to evaluate Biokinetics programmes in South Africa. This survey was piloted using three intern Biokineticists who were not participating in the research to ensure that questions were not ambiguous, asked what they were meant to ask and were thus valid. A non-copyrighted questionnaire available for use from High Point University in the USA, was adapted for the use of the supervising Biokineticists evaluation of their Biokinetics interns. This survey was piloted for the same reasons as the non-standardised part of the Biokineticists evaluating their internship questionnaire, using one supervising Biokineticist who was not participating in the research. Minor grammatical and

placement changes were made to the questionnaires however; no double-barreled, misleading or ambiguous questions were reported. The majority of the questions was close-ended in nature and used Likert Scale or “Yes,” “No,” type responses thus several open-ended questions were added to both protocols help the researcher better evaluate and understand the experience of the participants. To ensure the questions were reliable the pre-test pilot surveys underwent statistical analysis using Cronbach Alpha to test for internal reliability. According to Santos (1999) a Cronbach Alpha of $0.70 \leq \alpha < 0.80$ on an entire scale is acceptable for survey questionnaires, thus this standard was applied to the protocol. The survey protocol for Biokineticists evaluating their internships consisted of five sections (See appendix 4) namely Section 1: Demographics; Section 2: The CEQ; Section 3: Biokineticists evaluation of their internship year; Section 4: Biokinetics evaluations and Section 5: Open ended questions.

1. Section 1: Information such as age, gender and institution where initial training took place.
2. Section 2: The CEQ is a standardised questionnaire with 25 statements using a 5 point Likert scale with statements related to students' perceptions of the overall quality of their course. It was developed by Ramsden (1991) and evaluated at a later stage by McInnis, Griffin, James and Coates (2001). A questionnaire specific to Biokinetics was also added to this part of the survey, questions were formulated to collect information related to the Biokineticists experience of their Honours in Biokinetics year.
3. Section 3: Biokineticists evaluation of their internship. This section of the questionnaire deals with the Biokineticists s experience as an intern during their internship year. Questions were adapted from the Health Professions Council of South Africa (non-copyrighted), Form 170: Guidelines for applicants and evaluators of Biokinetics interns (HPCSA, 2013).
4. Section 4: Biokinetics evaluations. This section dealt with the number and type of evaluations that Biokineticists have to complete during their internship year. The questionnaire was compiled using the Health Professions Council of South Africa, form 253(non-copyright) which gives the minimum standards for the training of Biokineticists (HPCSA, 2013).
5. Section 5: Open ended questions aimed to elicit the Biokineticists opinion about specific topics relating to their internship year. The questions were linked to the questionnaire and aimed at providing clarification related to various aspects of the survey.

Questionnaire 2 (See appendix 4) was filled in by supervising Biokineticists. It was based on a generic non-copyrighted internship evaluation survey (High Point University, 2011). Place was left on the questionnaire (open – ended questions) for any suggestions or comments the supervising Biokineticist wanted to add.

All the surveys were available to be completed online. The covering letter included details about the survey so the participants could make an informed decision about whether or not to take part in the research. The survey was sent out to the participants who took part in the piloting of the questionnaires as an email link. BASA was approached to set up an online link to the survey, as well as to request if hard copies could be handed out to delegates at the Life through Movement International Conference (LTMIC) in Cape Town (2014).

3.5.2 Focus group protocol

Focus group questions were semi structured. Topics were identified from literature related to research conducted in related health fields and professions and scrutinising the questionnaires used in the study. The returned survey protocols were also used to help formulate the semi structured questionnaire used for the focus group sessions. The questions were quite broad, which allowed participants to answer freely. The researcher was able to probe responses if clarity was needed. According to Welman and Kruger (2001), focus group discussions help produce insights and attitudes towards the phenomena under investigation. As the focus group members build rapport they engage in discussions which then allow the researcher to capture their common experience. This adds depth to the study as it captures the lived, or day-to-day experience, of the group members. The focus group was convened on December 10th 2014, at 11am, which suited the participants and the researcher. A further 15 minute meeting took place with the focus group participants place on December the 17th at the same venue. Participants' were given the transcripts of the focus group discussion to read and verify. The transcripts were duly verified, with minor changes.

3.5.3 Phone interview protocol

A phone interview is a relatively short and useful way of conducting a survey and is often used in market research (Welman & Kruger, 2001). Questions in the phone interview were adapted from those used in the focus group session. Respondents were asked to give ethical consent via phone and then asked to fill in a confidentiality agreement which was e-mailed to them. Respondents agreed to this.

3.6 Data administration

3.6.1 Survey protocols

A letter was sent by e-mail to BASA explaining the nature of research and requesting e-mail contact details for the sample group as well the Biokinetics practices accredited for training intern Biokineticists. A similar letter was sent to the Health Professions Council (PPB) requesting contact details of registered Biokineticists. Letters of ethical clearance, from the University of Zululand, were sent to both BASA and the HPCSA. However, in spite of repeated requests, and visiting both institutions in person, the information was not made available. The reasons given for not making the information available were that systems were being upgraded, information was old and that e-mail addresses were not current. The researcher and supervisor consulted and it was then decided to hand out the protocol at the Life through Movement International Conference (LTMIC) in Cape Town (2014). The survey protocols were handed out by the researcher at the conference and participants were requested to fill them in if they met the study requirements (that is be a supervising Biokineticist in a practice accredited to train interns or have finished their internship on or before 2014) in and return to the researcher or return to a designated point at the BASA desk at the conference.

The researcher received 14 surveys filled in by supervising Biokineticists. To supplement this number the researcher phoned various practices, using lists provided by the HPCSA (PPB). However, it was found that a) phone numbers and addresses of practices were not up-to-date or correct b) some practices were no longer taking interns and c) some supervising Biokineticists were no longer practicing and d) some supervising Biokineticists had left the country. However, a further 6 questionnaires were filled in and returned.

3.6.2 Focus group

Participants for the focus group were invited to attend a focus group session in Rivonia, Johannesburg, at the Health and Nutrition Centre on the corner of North and Rivonia Road. The focus group discussion took place in an office within the building. Perceptions, issues and opinions of the focus group members were ascertained, through using a semi-structured interview schedule, related to their Biokinetics Honours and internship years.

3.6.3 Phone interviews

Participants were advised as to the nature of the study telephonically and e-mailed a document giving them more information about the research and requesting them to return (per e-mail) the consent form. Respondents were also advised that if they felt uncomfortable answering any questions they did not need to respond. The phone interviews took 10 – 12 minutes each. Questions relating to demographics were asked first and then questions relating to the study topic. Transcripts from phone interviews were verified by the participants when the researcher phoned interviewees 3 days after the phone interviews and read responses back to them. These calls took approximately 8 minutes each.

3.7 Data Analysis

3.7.1 Quantitative data

Descriptive statistics were used to analyse the quantitative data. Descriptive statistics made use of frequency tables and bar graphs to illustrate the data. The data was analysed taking into account the study propositions to find relationships between variables that evaluated the experience of the participants during their Biokinetics Honours and internships. Each question was looked at individually and descriptive statistics computed. Appropriate data were tested for an association that is any existing relationship, between relevant variables. In this regard a Chi-square test was used to determine if any significant differences existed between male and female Biokineticists in terms of their evaluation of their internship year. A Chi-square test was also used to see if there was any significant difference between male and female supervising Biokineticists evaluating their interns on appropriate variables.

The Chi-square is a non-parametric test which makes few assumptions about the data distribution as it does not assume homogeneity of variance within a sample. It is thus not as powerful as a parametric test and, if a researcher wants to increase its power to approaching parametric test equivalents, it is usual to increase the sample size (Kerr, Hall & Kozub, 2004). This was not possible with the sample in the current research, thus results (as sample sizes are small) should be interpreted with caution.

3.7.2 Qualitative data

Thematic Content Analysis (TCA) which is a process that helps researchers assemble themes that emerge from data, was used to analyse data from the open-ended questions in the surveys, the focus group discussion and the phone interviews. It is a conventional practice when analysing qualitative data, which involves searching through data until the researcher is sure that all themes have been identified, to classify any recurrent patterns or themes. A theme is a cluster of linked categories conveying similar meanings and usually emerges through the inductive analytic process, which characterises TCA. The following steps were followed when the data was analysed. Firstly, immersion with the data, followed by familiarisation with the data so that the researcher was able to get to know the data intimately. Then the data were put into categories, firstly major categories and then minor categories. The next step was to group the categories into themes which reflect the transcribed data. The researcher then had to repeat the steps so that he could check his objectivity, all the time reflecting on the process to ensure impartiality (Terre Blanche, Durrheim & Painter, 2006). The following steps adapted from Terre Blanche et al. (2006), were used to analyse the data.

- **Familiarising yourself with the data-** this phase involved repeated reading of the data while searching for meanings and patterns. According to Braun and Clark (2006), it is important to read through the entire data set at least once before beginning to code, as ideas, identification of possible patterns will be shaped as the data is read. The data is then transcribed into written form.
- **Generating initial codes-** this phase begins when the researcher has familiarised himself with the data and had generated an initial list of ideas about what is interesting about them. The next step then, was the production of initial codes from the data. The codes identified a feature of the

data that appeared interesting to the analyst, and referred to the most basic elements of the raw data. During this phase it was important to ensure that all actual data extracts were coded, and then collated together within each code.

As the researcher had three separate elements to code (open-ended questions, focus group and phone interview) this was a lengthy and difficult process. The data could not be coded together as it came from multiple sources at different times which had to be taken into consideration. Data were coded and themes were, as far as possible, identified by different but often similar (and in some instances the same) name. This was undertaken so that the origin of the themes could be identified (that is, from the open-ended questions, focus group or phone interviews). Data from the open-ended questions (Biokineticists evaluation of their internship and Honours year) were colour coded for ease of reference and conversion into themes.

- **Searching for themes-** when all data had been initially coded and collated, the researcher started to sort the different codes identified into potential themes, and collating all the relevant coded data extracts within the identified themes. The researcher analysed the codes and considered how different codes could be combined to form an all-embracing theme. Initial themes were then arranged into themes and sub-themes.
- **Reviewing themes-** this involves reviewing and refining themes that emerged from the data. The researcher read all collated extracts for each theme, and considered whether they appear to form a coherent pattern.
- **Defining and naming themes-** the researcher, at this point defined and further refined the themes that were presented for analysis. Defining and refining refers to identifying the essence of what each theme is about and determining what aspect of the data each theme and sub-theme captured.
- **Producing the report** - involves the final analysis and writing of the research report or dissertation. The researcher provided a concise, coherent, logical, non-repetitive and interesting account of the story of each of the data sets within and across the themes.

- **Reflexion** – The researcher was required to reflect on procedures and processes throughout all phases of the research. He discussed any challenges with his supervisor, who provided a “mirror” which enabled him to “see” his place in the research more clearly and be more impartial in reporting results.
- **De-briefing** – De briefing is required for both the researcher and participants after the collection and, in the case of the researcher, analysis of data. For instance, after the focus group session participants were de-briefed as, discussing challenges and uncomfortable experiences that were referred to during the discussion made two participants appear quite anxious. In the present research respondents were informed that if they needed to discuss issues with a relevant professional, after they were de-briefed by the researcher. None of the participants required this option as they felt the de-briefing after the focus group was adequate. However, they were provided with the name of a professional psychologist who had agreed to see participants pro-bono if needed. The researcher was de-briefed through consulting with his supervisor during the process of data analysis and the writing of the research dissertation.

3.7.3 Reliability, validity and bias

3.7.3.1 Reliability, validity and bias for the quantitative surveys

- The Course Experience Questionnaire (CEQ) is a standardised and validated instrument (McInnis et al., 2001). The overall scale has Cronbach Alpha of .79 which is acceptable for a survey based questionnaire.
- Validity in questionnaire studies is the extent to which the questions provide a true measure of what they are designed to measure. This was determined by the proper construction of questions based on research conducted in related health fields or professions. The survey protocol was piloted to ensure the questions were valid. No changes were made as there were no double-barreled, misleading or ambiguous questions reported.
- As the survey questionnaire was self-report in nature the researcher had no control in terms of if they were filled in truthfully or not however, as

Biokineticists are subject to the ethical code of the discipline it was expected that they completed the protocol honestly.

- Response bias is more pronounced with self-completed questionnaires since non-response is not a random process. Knowing who your non-respondents are is necessary if any decisions about possible bias are to be made (the names and e-mail addresses of participants were obtained from the questionnaires). It is therefore far more unlikely that participants would not tell the truth on a survey as they were “known” to the researcher. One hundred questionnaires were given out to Biokineticists evaluating their internships, who met the inclusion criteria and 47 returned (47% response rate). Response bias was determined by perusing the demographics of the returned questionnaires, no particular bias could be found from this scrutiny. The response rate for the survey was just under 50% which was not ideal, but adequate for the study purposes. An ideal response rate should ideally be around 55% - 65% (Braun & Clark, 2006).
- Although non-standardised questionnaires were used as part of the entire protocol a pilot study ensured that the questions were valid and were related to the aims, objectives and propositions of the study. An appropriate statistical test was to ensure the protocol had acceptable internal reliability.
- A non-standardised questionnaire was used to allow supervising Biokineticists to evaluate Biokinetic interns during their internship year. To ensure the questions were valid and relevant a pilot study was undertaken to ensure the questions were related to the aims, objectives and proposition of the study. An appropriate statistical test was to ensure the protocol had acceptable internal reliability.
- Internal reliability was tested for the survey protocols. The survey protocols were found to be within acceptable limits for internal reliability, Babbie and Mouton, (2009) and Santos (1999) state that a Cronbach Alpha of .70 or more is acceptable for a survey questionnaire. The non-standardised scales

had the following internal reliability statistics; Section 3: Biokineticist evaluating their internship experience = Cronbach Alpha .70; Section 4: Biokinetics evaluations = Cronbach Alpha .75 and Questionnaire 2 the supervising Biokineticists protocol Cronbach Alpha =.72. The overall internal reliability for the entire protocol (including the CEQ) was calculated at Cronbach Alpha = .75.

3.7.3.2 Reliability, validity and bias for the qualitative data

According to Shenton (2004) internal validity is difficult to ensure in qualitative studies, he advises the following steps, which were followed in the present research, to increase it.

- **Debriefing sessions**– after the focus group a de-briefing session took place between the researcher and his supervisor. Fundamentally, these sessions required the researcher to think outside the box and consider all ideas that he had. This helped the researcher identify his biases and subjective judgements.
- **The University of Zululand relevant committees' scrutiny of the proposed research:** the researcher used the feedback given from the various committees at the institution. This enabled the researcher to refine his methods, develop or change parts of the research design and strengthen his arguments.
- **Participants' validation:** the participants in the study were asked to validate data by reading the transcripts of the data prepared by the researcher. This verified that the experiences expressed by participants are the same as those formed during data collection.
- **Examination of previous research findings:** the researcher scrutinised findings of previous quantitative and qualitative studies of the same or similar phenomenon.

To ensure external the validity of the study, information about the following was given in the research proposal before the research started (adapted from Shenton, 2004).

- Methods used to collect data in the field were addressed. In this study an audio recorder was used (permission from participants was granted), to supplement audio recordings field notes were taken during the focus group session and phone interview.
- The sample size was given for the focus group and phone interviews.
- The number of researchers who conducted the research was noted. In this case it was one person who conducted the research and a supervisor who oversaw all aspects of the investigation. A psychologist helped the researcher prepare for the focus group and phone interviews and assisted with the facilitation of the focus group.
- The number of participants and length of the focus group session was noted as were the number of participants and length of the phone interview.
- Other threats to reliability and validity occur through interviewer bias when for instance an interviewer biases a focus group by the tone of their voice. Awareness and insight into this fact enabled the researcher to be objective about the process.

3.8 Ethical Considerations

3.8.1 Informed consent

The survey was accompanied by a covering letter explaining the nature and purpose of the research (See appendix 2a and 2b). Prospective participants in the study were requested to sign an informed consent form (See appendix 3) which was also attached to the survey protocol; they were also informed that their identities would remain anonymous. The data was used for research purposes and participants were also informed that it may be published in a paper or journal at the researcher's discretion. Participants were informed that they did not have to complete the questionnaire but were encouraged to do so. The focus group participants were informed that they could withdraw at any time, if they wanted to do so, without giving a reason. Although the researcher knows the names of the participants' full confidentiality was observed in the reporting of the results as no participant from the survey, phone interview or the focus group was named.

Permission for research was obtained through the Department of Biokinetics and Sports Science, University of Zululand and the Higher Degrees Committee of the institution. Research was underpinned by ethical guidelines from the HPCSA (PPB) as well as approved by the Ethics Committee of the University of Zululand.

3.9 Summary

Chapter 3 gave a comprehensive overview of how the research was undertaken. The following chapter presents the study results.

CHAPTER 4: RESULTS AND ANALYSIS

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- 4.3 Section 2: The Course Evaluation Questionnaire (CEQ)
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- 4.13 Presentation of phone interview results

- 4.13.1 Demographic results (phone interviews)
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 - 4.14 Tabular summary of main themes and sub – themes for phone interviews
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4.1 Introduction

This chapter presents the data analysis and results produced by the study. The research aimed to investigate Biokineticists' evaluation of their Biokinetics Honours and internship year and supervising Biokineticists evaluation of intern Biokineticists. Data was analysed using frequency distributions, bar graphs and pie charts (presented as figures) and the Chi-square test.

Quantitative results from the Biokineticists evaluation of their Biokinetic Honours and internship year are presented initially. Section 1, which is the sample demographics are presented first in order to provide background information about study participants. The results from Section 2, the CEQ, are presented next followed by results from Section 3, Biokineticists evaluation of their internship year then Section 4, Biokinetics evaluations. Quantitative results from questionnaire 2 (supervising Biokineticists) are then presented.

Qualitative results are presented in two sections, firstly results from Section 5 of the Biokineticists evaluating their Honours and internship year questionnaire. Data gleaned from open-ended questions allowed Biokineticists the ability to give their opinions about specific items, this is followed by qualitative results garnered from open-ended questions on the supervising Biokineticists survey. Results from the focus group are presented next. The focus group was aimed at gaining an in-depth understanding of the Biokineticists perceptions of their experiences and challenges in their Honours and internship years. Finally, results from the phone-interviews are presented where participants gave opinions about their Honours and internship years.

4.2 Section 1: Demographic results – Biokineticists evaluating their internship year

The demographic results are presented first using frequency tables followed by results from other sections of the survey (N = 47, SD = 3.12).

Frequency table 1: Sex

Value	N	%	Cumulative %
Female	34	72.34	72,34
Male	13	27.66	100.00
Total	47	100.00	

Table 1 indicates that 72.34% of respondents were female and less than a third was male (27.66%).

Frequency table 2: Age

Value	N	%	Cumulative %
22 years	2	4.26	4.26
24 years	6	12.77	17.02
25 years	5	10.64	27.66
26 years	7	14.89	42,55
27 years	5	10.64	53.19
28 years	8	17.02	70.21
29 years	7	14.89	85.11
30 years	1	2.13	87.24
31+ years	6	12.77	100.00
Total	47	100.00	

Frequency table 2 indicates that 4.26% of respondents were 22 years of age, 12.77% were 24 years of age, 10.64% were 25 years of age, 14.89% were 26 years of age, 10.64% were 27 years of age, 17.02% were 28 years of age, 14.89% were 29 years of age, 2.13% were 30 years of age and 12.77% of respondents were more than 31 years of age.

Frequency table 3: Race

Value	N	%	Cumulative %
Black	1	2.13	2.13
Coloured	2	4.26	6.38
Indian/Asian	1	2.13	8.51
White	43	91.49	100.00
Total	47	100	

Frequency table 3 indicates that the majority of Biokineticists who responded to the questionnaire completed their internships between 2010 and 2013 were White (91.49%) with only 2.13% Black, 4.26% Coloured and 2.13% Indian/Asian.

Frequency table 4: Province

Value	N	%	Cumulative %
Eastern Cape	7	14.89	14.89
Free State	1	2.13	17.02
Gauteng	19	40.43	57.45
Kwazulu-Natal	3	6.38	63.83
North West	1	2.13	65.96
Northern Cape	1	2.13	68.09
Western Cape	15	31.91	100.00
Total	47	100.00	

Frequency table 4 indicates that the majority of respondents now live and, by inference, work in Gauteng (40.43%) and the Western Cape (31.91%) other participants reside and work in the Eastern Cape (14.89%), Free State (2.13%), North West Province (2.13%), KwaZulu-Natal (6.38%) and the Northern Cape (2.13%).

Frequency table 5: City/Town

Value	N	%	Cumulative %
Johannesburg (Jhb)	17	36.17	36.17
Pretoria (Pta)	2	4.26	40.43
Cape Town (CT)	12	25.53	65.96
Durban (Durb)	2	4.26	70.21
Bloemfontein (Bloem)	1	2.13	72.34
Port Elizabeth (PE)	6	12.77	85.11
East London (EL)	1	2.13	87.23
Potchefstroom (Potch)	1	2.13	89.36
Stellenbosch (Stell)	1	2.13	91.49
Colesburg (Clsbg)	1	2.13	93.62
Malmesbury (Mlby)	1	2.13	95.74
George (Grge)	1	2.13	97.87
Pietermaritzburg(PMB)	1	2.13	100.00
Total	47	100.00	

Frequency table 5 indicates that the majority of respondents reside and work in the following cities Johannesburg (36.17%), Cape Town (25.53%), Port Elizabeth (12.77%) and Durban (4.26). The other towns or cities only have (2.13%) or one respondent each who reside and work in them.

Frequency table 6: Practice location (urban – rural)

Value	N	%	Cumulative %
Urban	45	95.74	95.74
Rural	2	4.26	100.00
Total	47	100.00	

Frequency table 6 indicates that the majority of respondents who answered the questionnaire, at the time of the survey, practice in an urban area (95.74%) as compared to a rural area (4.26%).

Frequency table 7: Undergraduate degree

Value	N	%	Cumulative %
University of Johannesburg (UJ)	11	23.40	23.40
University of Potchefstroom (Potch)	4	8.51	31.91
Nelson Mandela Metropole University (NMMU)	9	19.15	51.06
University of the Free State (UFS)	3	6.38	57.45
University of Pretoria (UP)	5	10.64	68.09
University of Stellenbosch (Maties)	6	12.77	80.85
University of Witwatersrand (Wits)	8	17.02	97.87
University of Zululand (UZ)	1	2.13	100.00
Total	47	100.00	

Frequency table 7 indicates where respondents obtained their undergraduate degrees. The majority gained their undergraduate degree from UJ (23.40%) followed by NMMU (19.15%) and Wits (17.02%). The rest of the respondents gained their undergraduate degrees from Maties, (12.77%), (10.64%), Potch (8.51%), UFS (6.38%) and UZ (2.13%)

Frequency table 8: What year did you complete your internship training?

Value	N	%	Cumulative %
2010	10	21.28	21.28
2011	4	8.51	29.79
2012	6	12.77	42.55
2013	9	19.15	61.70
2014	2	4.26	65.96
Other	16	34.04	100.00
Total	47	100.00	

The majority of the sample completed their internship (65.95%) internship between 2010 (21.28%); 2011 (8.51%); 2012 (12.77%); 2013 (19.15%) and 2014 (4.26%). The remaining respondents, just over a third, completed their internships before that date (34%).

Frequency table 9: Where did you complete your Honours degree?

Value	N	%	Cumulative %
University of Cape Town (UCT)	4	8.51	8.51
University of Johannesburg (UJ)	7	14.89	23.40
University of KwaZulu-Natal (UKZN)	3	6.38	29.79
University of North West (Potch)	5	10.64	40.43
Nelson Mandela Metropole University (NMMU)	11	23.40	63.83
University of the Free State (UFS)	2	4.26	68.09
University of Pretoria (UP)	3	6.38	74.47
University of Stellenbosch (Maties)	5	10.64	85.11
University of Zululand (UZ)	1	2.13	87.23
University of the Witwatersrand (Wits)	6	12.77	100.00
Total	47	100.00	

Frequency table 9 indicates where respondents obtained their post-graduate Honours degree. Respondents who completed their Honours degree at UCT were 8.51% of the total, those who completed at UJ were 14.89% of the total sample, those who completed at UKZN were 6.38% of the sample, 10.64% completed at Potch, 23.40% completed at NMMU, 4.26% completed at UFS, 6.38% completed at UP, 10.64% completed at Maties while 2.13% completed at UZ and 12.77% completed at Wits.

Frequency table 10: In which province did you complete your internship?

Value	N	%	Cumulative %
Eastern Cape	7	14.89	14.89
Free State	1	2.13	17.02
Gauteng	24	51.06	68.09
KwaZulu-Natal	2	4.26	72.34
North West	2	4.26	76.60
Western Cape	11	23.40	100.00
Total	47	100.00	

Frequency table 10 indicates that the majority of the respondents, over 50% (51.06%), completed their internships in Gauteng and just over 20% (23.40%) completed their internships in the Western Cape. The remaining participants completed their internships in the Eastern Cape (14.89%), Kwazulu-Natal (4.26%), North West Province (4.26%) and Free State (2.13%).

4.3 Section 2: The Course Experience Questionnaire (CEQ)

The following section presents the results for the CEQ (Ramsden, 1991). The results are presented using frequency table, figures and chi-square test results in terms of any significant differences (marked effects are significant if $p \leq 0.0500$) between male and female respondents. Likert Scale responses are. “Strongly Disagree,” “Disagree,” “Neither Agree nor Disagree,” “Agree,” and “Strongly Agree.”

Frequency table 11: The staff put a lot of time into commenting on my work

Value	N	%	Cumulative %
Strongly disagree	3	6.38	6.38
Disagree	3	6.38	12.77
Neither agree nor disagree	8	17.02	29.79
Agree	25	53.19	52.98
Strongly agree	8	17.02	100.00
Total	47	100.00	

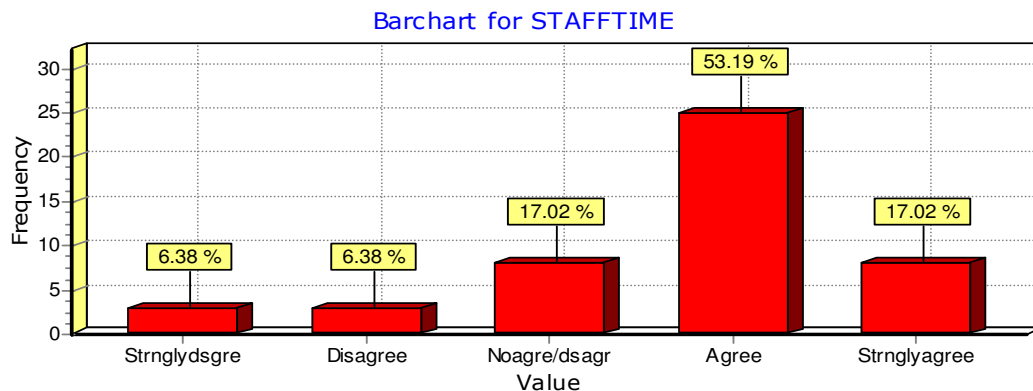


Figure 1: The staff put a lot of time into commenting on my work

Frequency table 11 and figure 1 indicate that 6.38% of the sample strongly disagrees with the statement, “ staff put a lot of time into commenting on my work,” 6.38% disagree, 17.02% neither

agree nor disagree while the majority 53.19% agree and 17.02% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.405$ ($df=4$, $\chi^2=4.01$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 12: The teaching staff normally gave me helpful feedback on how I was going

Value	N	%	Cumulative %
Strongly disagree	3	6.38	6.38
Disagree	3	6.38	12.77
Neither agree nor disagree	4	8.51	21.28
Agree	26	55.32	76.60
Strongly agree	11	23.40	100.00
Total	47	100.00	

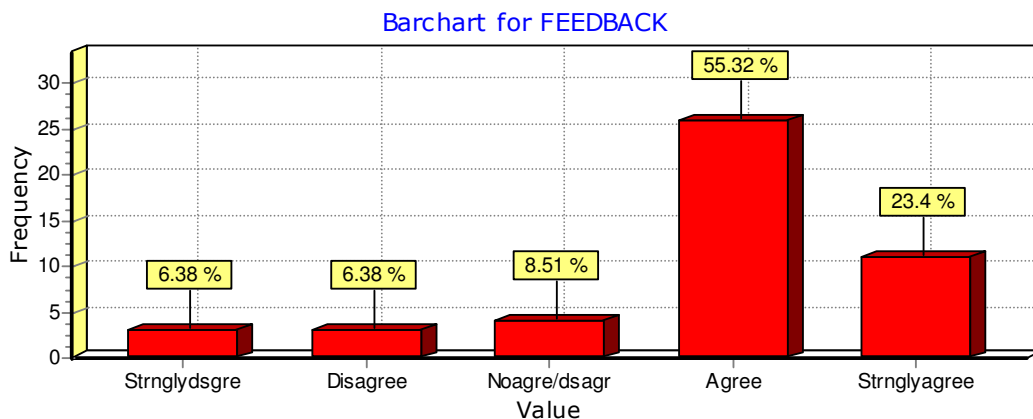


Figure 2: The teaching staff normally gave me helpful feedback on how I was going

Frequency table 12 and figure 2 indicate that 6.38% of the sample strongly disagrees with the statement, “the teaching staff normally game me helpful feedback on how I was going,” 6.38% disagree, 8.51% neither agree nor disagree while the majority 55.32% agree and 23.4% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.803$ ($df=4$, $\chi^2=1.63$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 13: The course helped me develop my ability to work as a team member

Value	N	%	Cumulative %
Strongly disagree	2	4.26	4.26
Disagree	2	4.26	8.51
Neither agree nor disagree	8	17.02	25.53
Agree	30	63.83	89.36
Strongly agree	5	10.64	100.00
Total	47	100.00	

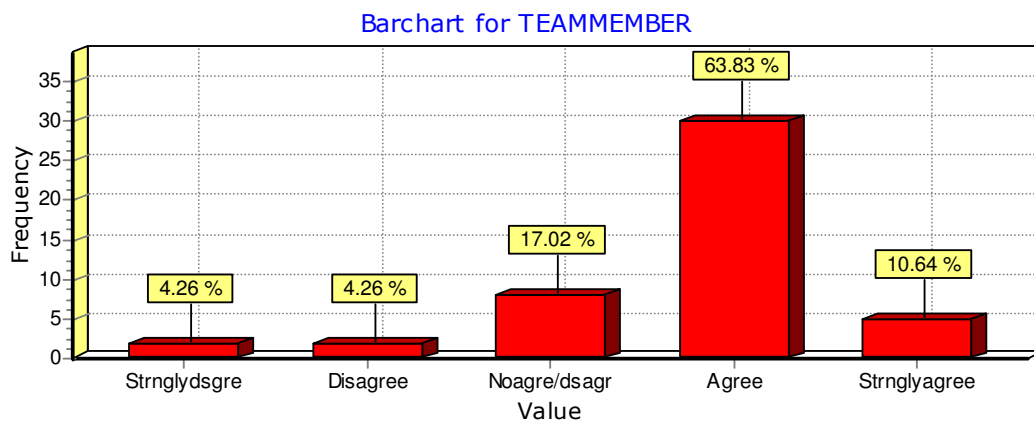


Figure 3: The course helped me develop my ability to work as a team member

Frequency table 13 and figure 3 indicate that 4.26% of the sample strongly disagrees with the statement, “the course helped me develop my ability to work as a team member,” 4.26% disagree, 17.02% neither agree nor disagree while the majority 63.83% agree and 10.64% strongly agree with the statement. A Chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.120$ ($df=4$, $\chi^2=7.31$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 14: It was always easy to know the standard of work expected

Value	N	%	Cumulative %
Strongly disagree	1	2.12	2.12
Disagree	9	19.15	21.28
Neither agree nor disagree	11	23.40	44.68
Agree	19	40.42	55.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

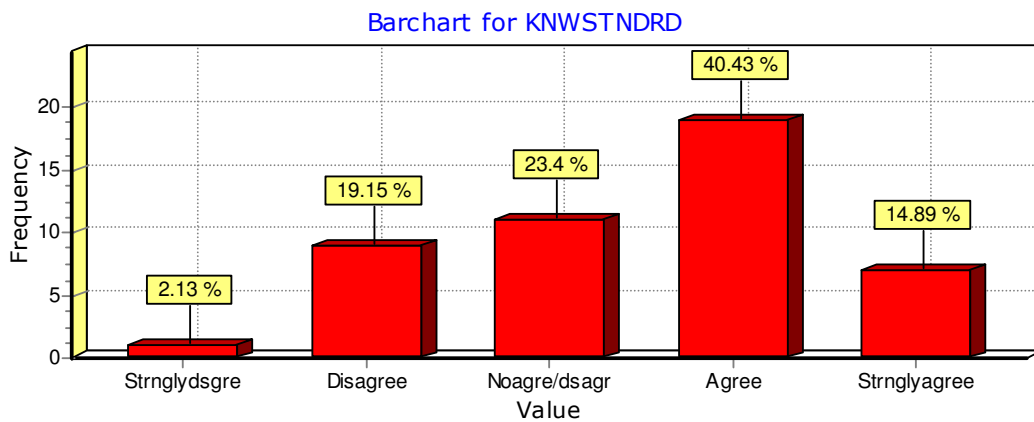


Figure 4: It was always easy to know the standard of work expected

Frequency table 14 and figure 4 indicate that 2.13% of the sample strongly disagrees with the statement, “It was always easy to know the standard of work expected of me,” 19.15% disagree, 23.4% neither agree nor disagree while the majority 40.43% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.333$ ($df=4$, $\chi^2=4.58$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 15: The teaching staff of this course motivated me to do my best work

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	1	2.13	4.26
Neither agree nor disagree	8	17.02	21.26
Agree	24	51.06	72.34
Strongly agree	13	27.66	100.00
Total	47	100.00	

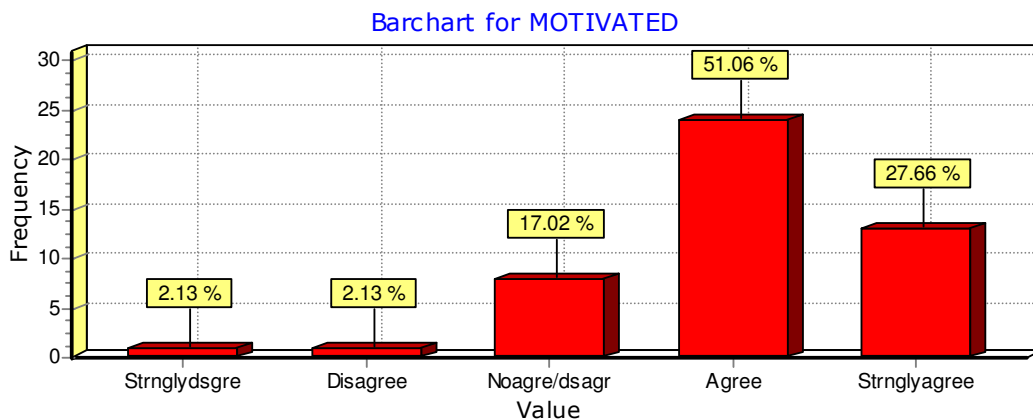


Figure 5: The teaching staff of this course motivated me to do my best work

Frequency table 15 and figure 5 indicate that 2.13% of the sample strongly disagrees with the statement, “The teaching staff of this course motivated me to do my best work,” 2.13% disagree, 17.02% neither agree nor disagree while the majority 51.00% agree and 27.66% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.529$ ($df=4$, $\chi^2=0.529$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 16: The course provided me with a broad overview of my field of knowledge

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	1	2.13	4.26
Neither agree nor disagree	7	14.89	19.15
Agree	27	57.45	76.60
Strongly agree	11	23.40	100.00
Total	47	100.00	

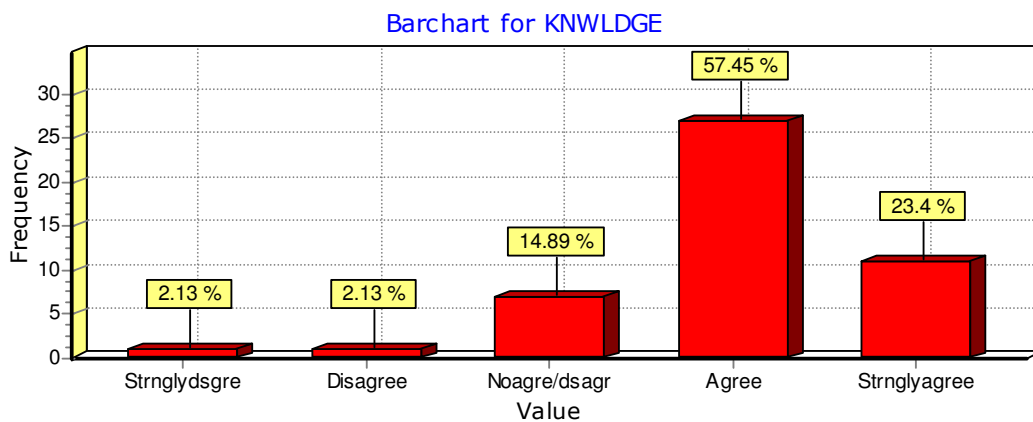


Figure 6: The course provided me with a broad overview of my field of knowledge

Frequency table 16 and figure 6 indicate that 2.13% of the sample strongly disagrees with the statement, “The course provided me with a broad overview of my field of knowledge,” 2.13% disagree, 14.89% neither agree nor disagree while the majority 57.45% agree and 23.4% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.189$ ($df=4$, $\chi^2=6.14$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 17: The course sharpened my analytical skills

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	2	4.26	6.38
Neither agree nor disagree	9	19.15	25.53
Agree	27	57.45	82.98
Strongly agree	8	17.02	100.00
Total	47	100.00	

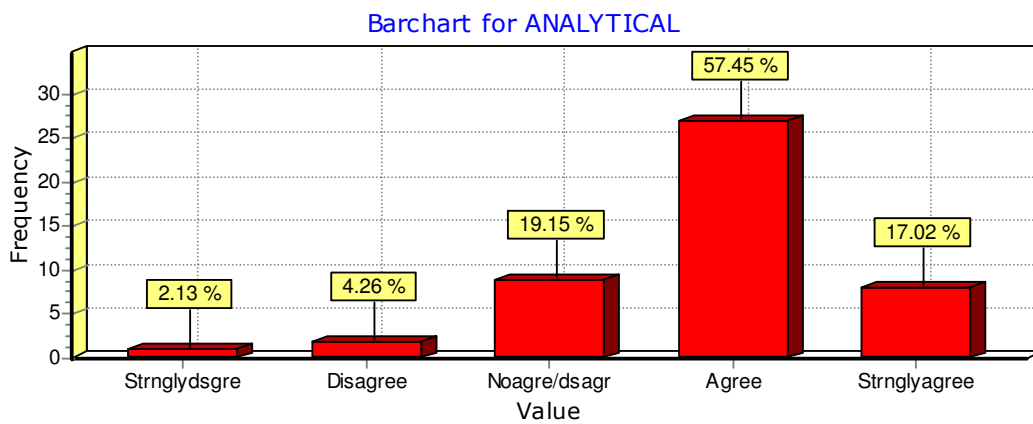


Figure 7: The course sharpened my analytical skills

Frequency table 17 and figure 7 indicate that 2.13% of the sample strongly disagrees with the statement, “The course sharpened my analytical skills,” 4.26% disagree, 19.15% neither agree nor disagree while the majority 57.45% agree and 17.02% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.6.35$ ($df=4$, $chi-square=2.55$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 18: My lecturers were extremely good at explaining things

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	6	12.77	14.89
Neither agree nor disagree	10	21.28	36.17
Agree	23	48.94	85.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

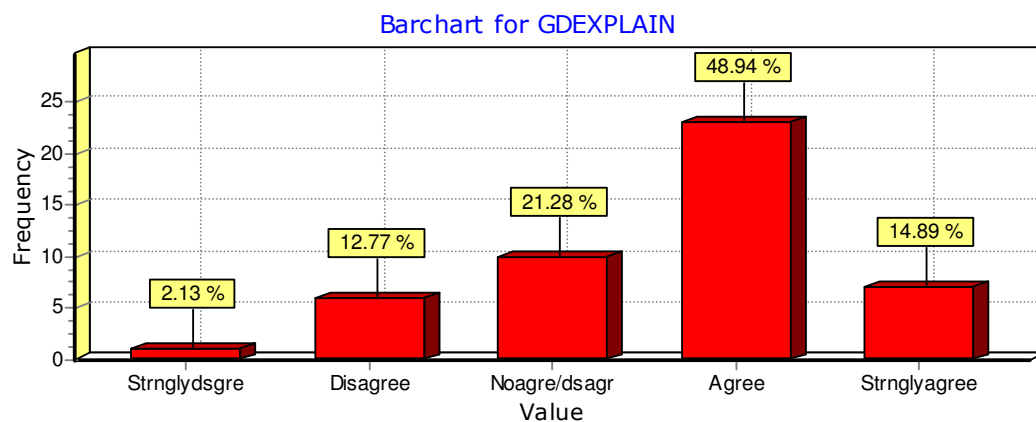


Figure 8: My lecturers were extremely good at explaining things

Frequency table 18 and figure 8 indicate that 2.13% of the sample strongly disagrees with the statement, “My lecturers were extremely good at explaining things,” 12.77% disagree, 21.28% neither agree nor disagree while the majority 48.94% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.698$ ($df=4$, $\chi^2=2.20$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 19: The teaching staff worked hard to make the lectures interesting

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	8	17.02	19.15
Neither agree nor disagree	6	12.77	31.91
Agree	27	57.45	89.36
Strongly agree	5	10.64	100.00
Total	47	100.00	

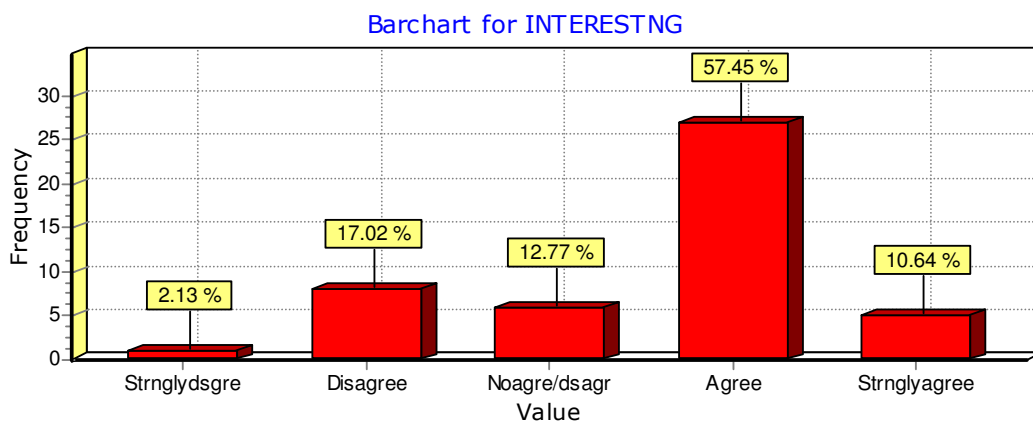


Figure 9: The teaching staff worked hard to make the lectures interesting

Frequency table 19 and figure 9 indicate that 2.13% of the sample strongly disagrees with the statement, “The teaching staff worked hard to make the lectures interesting,” 17.02% disagree, 12.77% neither agree nor disagree while the majority, 57.45% agree and 10.64% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.920$ ($df=4$, $\chi^2=0.93$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 20: The course developed my confidence to investigate new ideas

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	7	14.89	17.02
Neither agree nor disagree	11	23.40	40.42
Agree	21	44.68	85.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

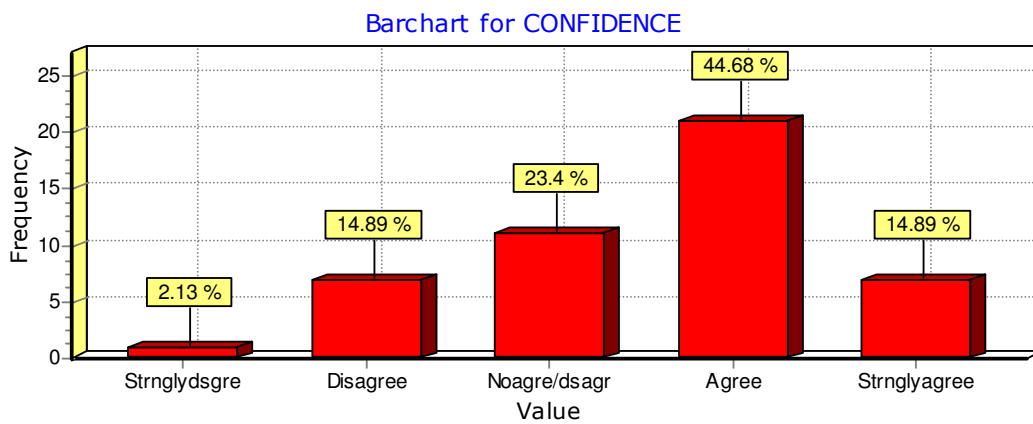


Figure 10: The course developed my confidence to investigate new ideas

Frequency table 20 and figure 10 indicate that 2.13% of the sample strongly disagrees with the statement, “The course developed my confidence to investigate new ideas,” 14.89% disagree, 23.4% neither agree nor disagree while the majority, 44.68% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.838$ ($df=4$, $\chi^2=1.44$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 21: The course developed my problem solving skills

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	2	4.26	6.28
Neither agree nor disagree	12	25.53	31.91
Agree	26	55.32	87.23
Strongly agree	6	12.77	100.00
Total	47	100.00	

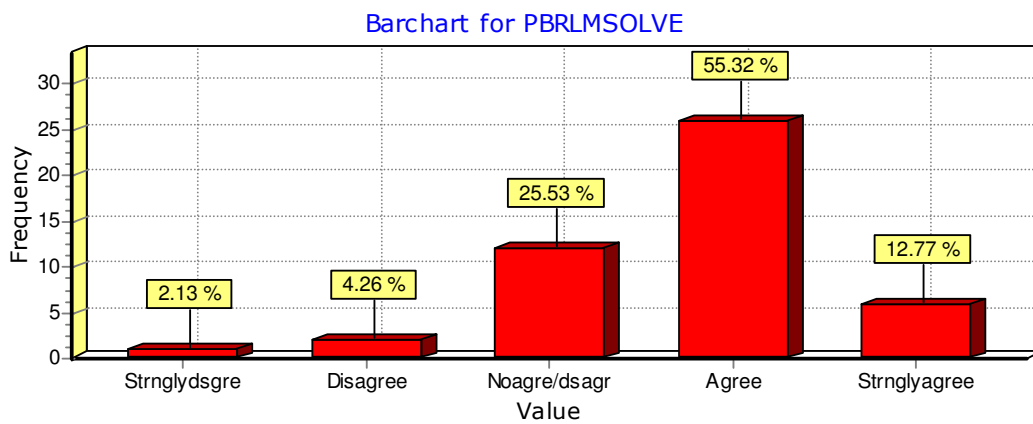


Figure 11: The course developed my problem solving skills.

Frequency table 21 and figure 11 indicate that 2.13% of the sample strongly disagrees with the statement, “The course developed my problem solving skills,” 4.26% disagree, 25.43% neither agree nor disagree while the majority, 55.32% agree and 12.77% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.767$ ($df=4$, $\chi^2=1.83$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 22: The staff made a real effort to understand difficulties I might be having with my work

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	9	19.15	21.28
Neither agree nor disagree	10	21.28	42.55
Agree	21	44.68	87.22
Strongly agree	6	12.77	100.00
Total	47	100.00	

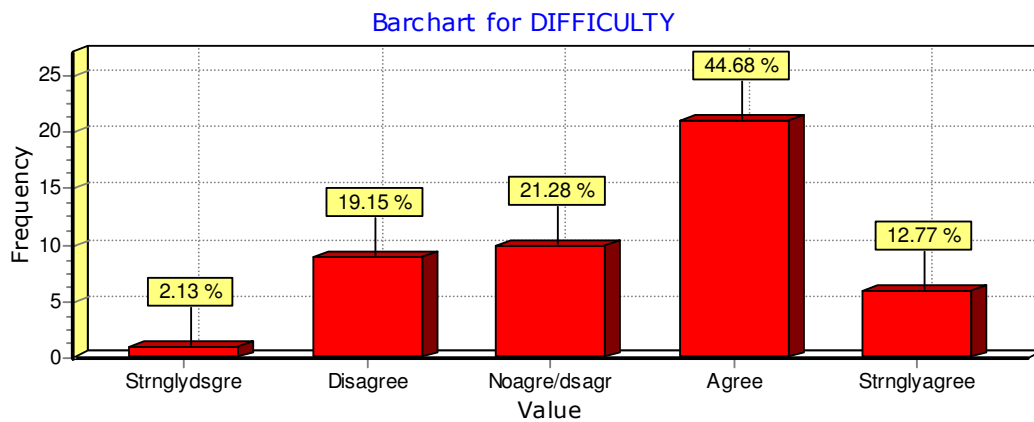


Figure 12: The staff made a real effort to understand difficulties I might be having with my work

Frequency table 22 and figure 12 indicate that 2.13% of the sample strongly disagrees with the statement, “The staff made a real effort to understand difficulties I might be having with my work,” 19.15% disagree, 21.28% neither agree nor disagree while the majority, 44.68% agree and 12.77% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.470$ ($df=4$, $\chi^2=3.55$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 23: I usually had a clear idea of where I was going and what was expected of me in this course

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	7	14.89	17.02
Neither agree nor disagree	8	17.02	34.04
Agree	26	55.32	89.36
Strongly agree	5	10.64	100.00
Total	47	100.00	

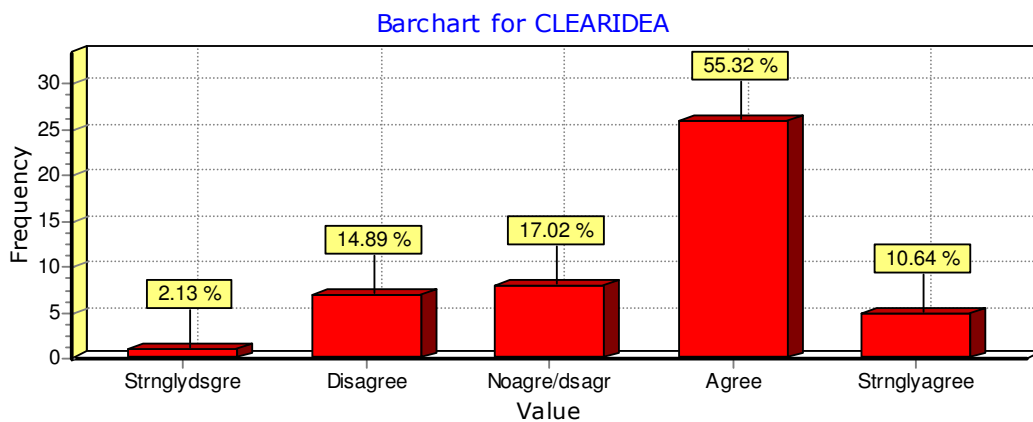


Figure 13: I usually had a clear idea of where I was going and what was expected of me in this course

Frequency table 23 and figure 13 indicate that 2.13% of the sample strongly disagrees with the statement, “I usually had a clear idea of where I was going and what was expected of me in this course,” 14.89% disagree, 17.02% neither agree nor disagree while the majority, 55.32% agree and 10.64% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.450$ ($df=4$, $\chi^2=3.68$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 24: University stimulated my enthusiasm for further learning

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	6	12.77	14.89
Neither agree nor disagree	11	23.40	38.30
Agree	19	40.43	78.72
Strongly agree	10	21.28	100.00
Total	47	100.00	

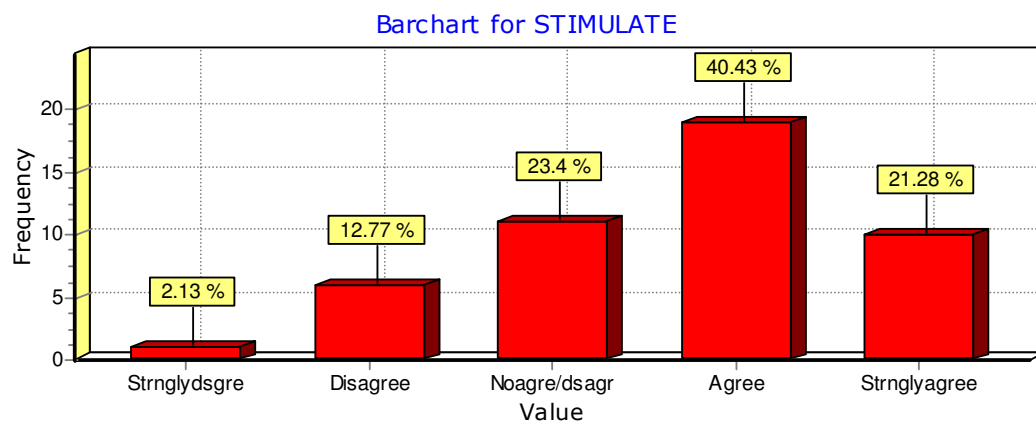


Figure 14: University stimulated my enthusiasm for further learning

Frequency table 24 and figure 14 indicate that 2.13% of the sample strongly disagrees with the statement, “University stimulated my enthusiasm for further learning, 12.77% disagree, 23.4% neither agree nor disagree while the majority, 40.43% agree and 21.28% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.91$ ($df=4$, $\chi^2=8.02$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 25: The course improved my skills in written communication

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	5	10.64	12.77
Neither agree nor disagree	8	17.02	29.79
Agree	26	55.32	85.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

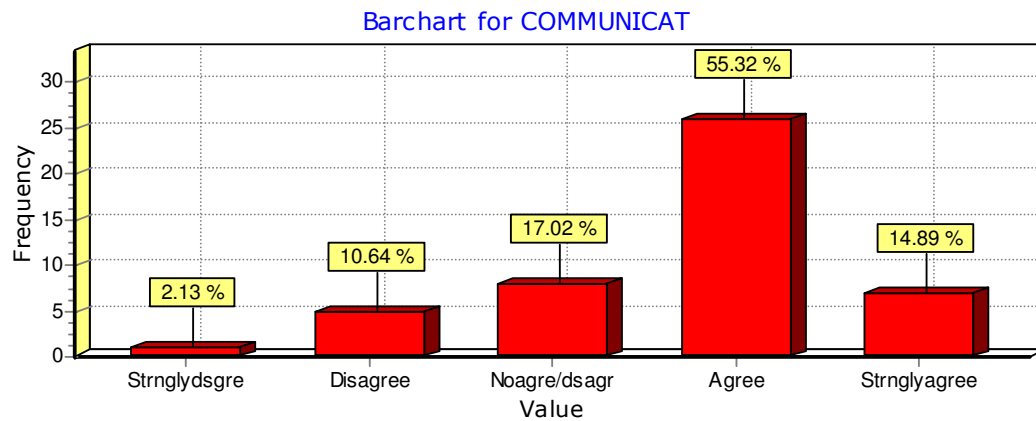


Figure 15: The course improved my skills in written communication

Frequency table 25 and figure 15 indicate that 2.13% of the sample strongly disagrees with the statement, “The course improved my skills in written communication,” 10.64% disagree, 17.02% neither agree nor disagree while the majority, 55.32% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.044$ ($df=4$, $\chi^2=9.89$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 26: I learned to apply principles from this course to new situations

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	4	8.51	10.64
Neither agree nor disagree	7	14.89	25.53
Agree	31	65.96	91.49
Strongly agree	4	8.51	100.00
Total	47	100.00	

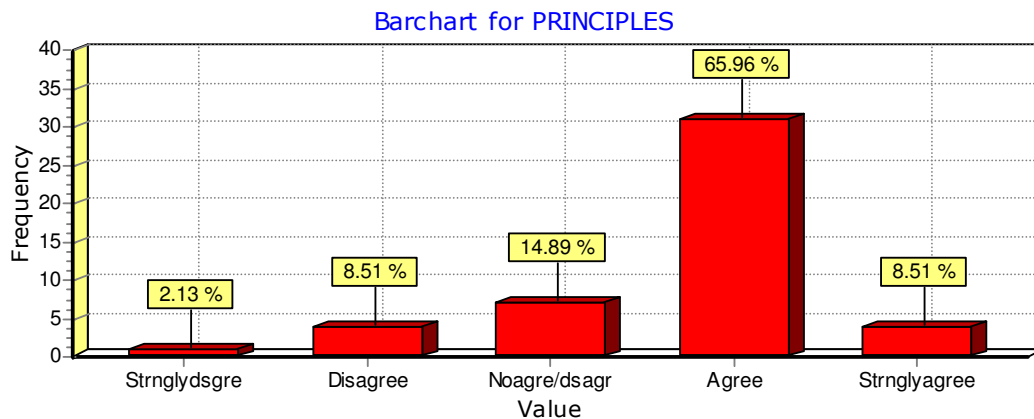


Figure 16: I learned to apply principles from this course to new situations

Frequency table 26 and figure 16 indicate that 2.13% of the sample strongly disagrees with the statement, “I learned to apply principles from this course to new situations,” 8.51% disagree, 14.89% neither agree nor disagree while the majority, 65.96% agree and 8.51% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.727$ ($df=4$, $\chi^2=2.05$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 27: It was often hard to discover what was expected of me in this course

Value	N	%	Cumulative %
Strongly disagree	3	6.38	6.38
Disagree	13	27.66	34.04
Neither agree nor disagree	16	34.04	68.09
Agree	12	25.53	93.62
Strongly agree	2	6.38	100.00
Total	47	100.00	

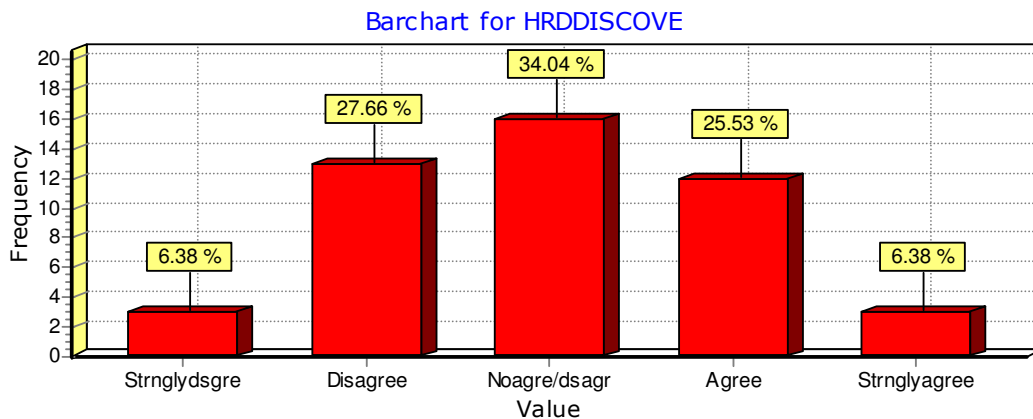


Figure 17: It was often hard to discover what was expected of me in this course

Frequency table 27 and figure 17 indicate that 6.38% of the sample strongly disagrees with the statement, “It was often hard to discover what was expected of me in this course, 27.66% disagree, 34.04% neither agree nor disagree while 25.53% agree and 6.38% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.275$ ($df=4$, $\chi^2=5.12$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 28: I consider what I learned valuable to my future

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Neither agree nor disagree	1	2.13	4.26
Agree	27	57.45	61.70
Strongly agree	18	38.30	100.00
Total	47	100.00	

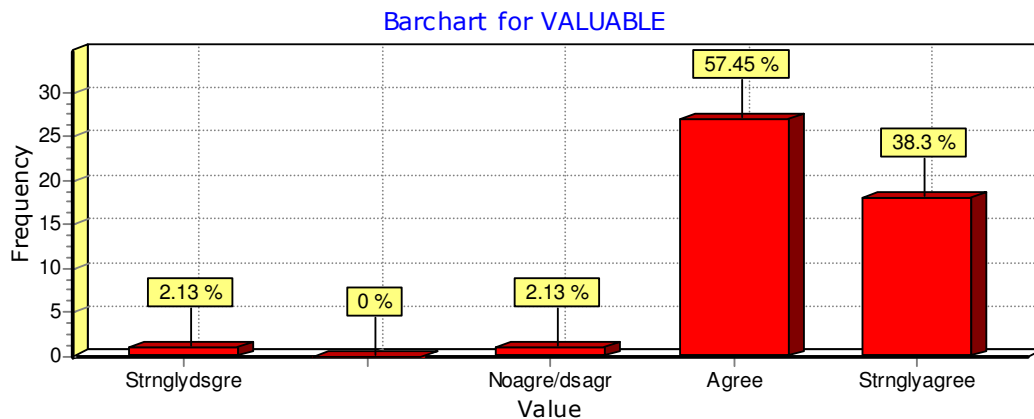


Figure 18: I consider what I learned valuable to my future

Frequency table 28 and figure 18 indicate that 2.13% of the sample strongly disagrees with the statement, “I consider what I learned valuable to my future,” 2.13% neither agree nor disagree while the majority, 57.45% agree and 38.3% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.154$ ($df=4$, $\chi^2=5.26$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 29: As a result of my course I feel confident about tackling unfamiliar problems

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	3	6.28	8.51
Neither agree nor disagree	9	19.15	27.66
Agree	23	48.94	76.60
Strongly agree	11	23.40	100.00
Total	47	100.00	

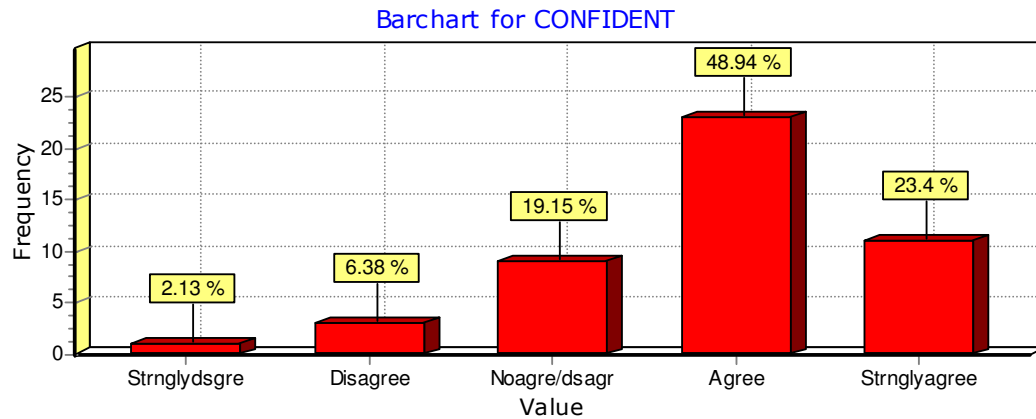


Figure 19: As a result of my course I feel confident about tackling unfamiliar problems

Frequency table 29 and figure 19 indicate that 2.13% of the sample strongly disagrees with the statement, “As a result of my course I feel confident about tackling unfamiliar problems,” 6.38% disagree, 19.15% neither agree nor disagree while the majority, 48.94% agree and 23.4% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.705$ ($df=4$, $\chi^2=2.17$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 30: My course helped me to develop the ability to work on my own

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	5	10.64	12.77
Neither agree nor disagree	7	14.89	27.66
Agree	23	48.94	76.60
Strongly agree	11	23.40	100.00
Total	47	100.00	

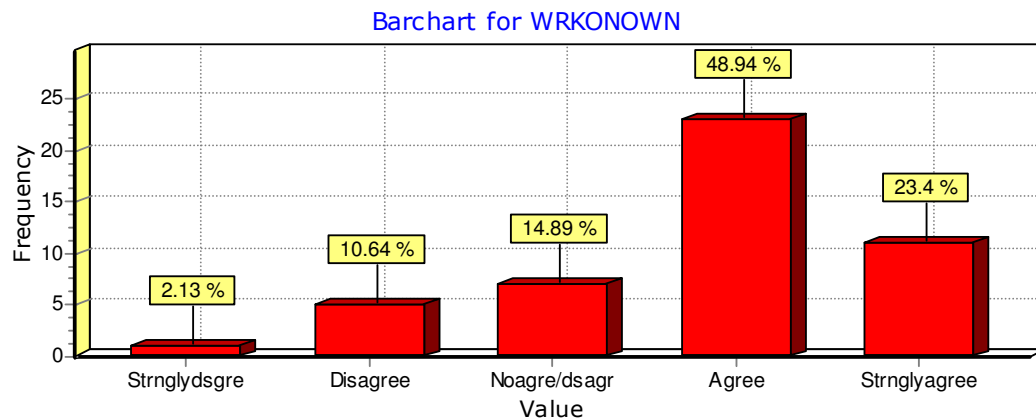


Figure 20: My course helped me to develop the ability to work on my own

Frequency table 30 and figure 20 indicate that 2.13% of the sample strongly disagrees with the statement, “My course helped me to develop the ability to work on my own,” 10.64% disagree, 14.89% neither agree nor disagree while the majority, 48.94% agree and 23.4% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.939$ ($df=4$, $\chi^2=0.80$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 31: The staff made it clear right from the start what they expected from students

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	6	12.77	14.89
Neither agree nor disagree	7	14.89	29.79
Agree	26	55.32	85.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

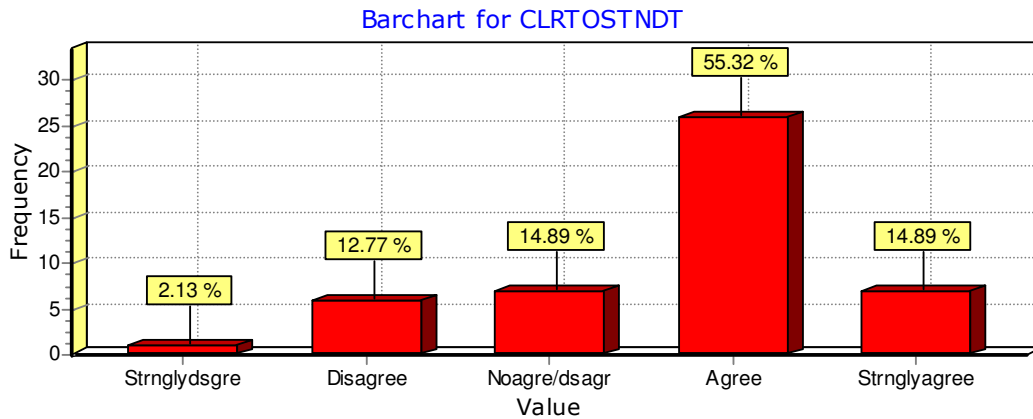


Figure 21: The staff made it clear right from the start what they expected from students

Frequency table 31 and figure 21 indicate that 2.13% of the sample strongly disagrees with the statement, “The staff made it clear right from the start what they expected from students,” 12.77% disagree, 14.89% neither agree nor disagree while the majority, 55.32% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.398$ ($df=4$, $\chi^2=4.06$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 32: My university experience encouraged me to value perspectives other than my own

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	1	2.13	4.26
Neither agree nor disagree	8	17.02	21.28
Agree	30	63.83	85.11
Strongly agree	7	14.89	100.00
Total	47	100.00	

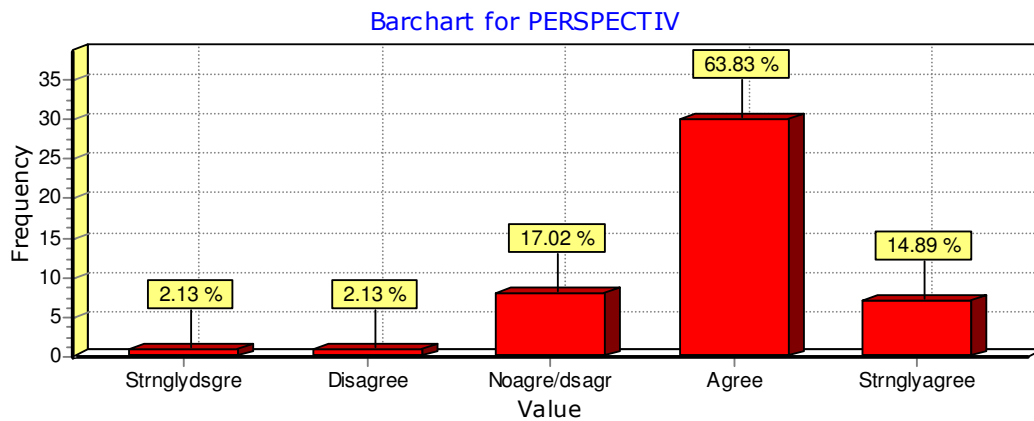


Figure 22: My university experience encouraged me to value perspectives other than my own

Frequency table 32 and figure 22 indicate that 2.13% of the sample strongly disagrees with the statement, “My university experience encouraged me to value perspectives other than my own,” 2.13% disagree, 17.02% neither agree nor disagree while the majority, 63.83% agree and 14.89% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.692$ ($df=4$, $\chi^2=2.24$) which implies that there is no statistically significant difference between male and female respondents answers to the question.

Frequency table 33: Overall I was satisfied with the quality of this course

Value	N	%	Cumulative %
Strongly disagree	1	2.13	2.13
Disagree	3	6.38	8.51
Neither agree nor disagree	11	23.40	31.91
Agree	24	51.06	82.98
Strongly agree	8	17.02	100.00
Total	47	100.00	

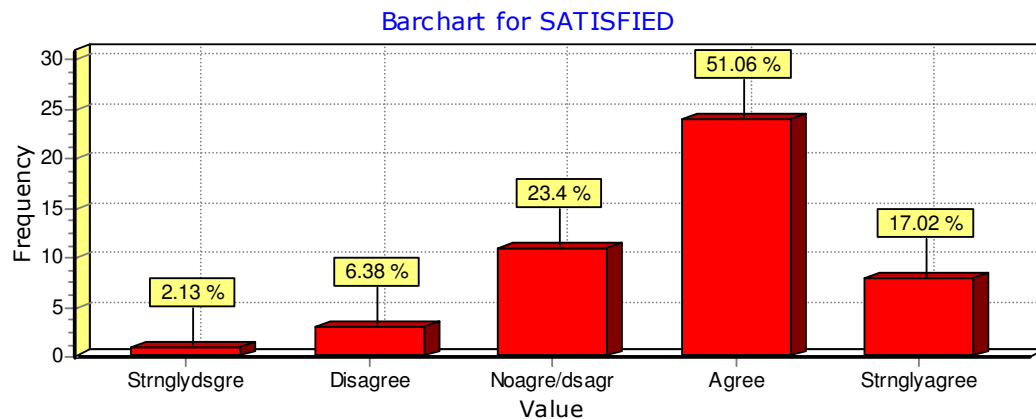


Figure 23: Overall I was satisfied with the quality of this course

Frequency table 33 and figure 23 indicate that 2.13% of the sample strongly disagrees with the statement, “Overall I was satisfied with the quality of this course,” 6.38% disagree, 23.4% neither agree nor disagree while the majority, 51.06% agree and 17.02% strongly agree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.855$ ($df=4$, $\chi^2=1.34$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

4.4 Section 3: Biokineticists evaluation of their internships

The following section presents the results from the Biokineticists experience as an intern during their internship year. This section of the questionnaire is adapted from a non-copyrighted questionnaire from the HPCSA (2013), Physiotherapy, Podiatry and Biokinetics division. The Likert Scale responses for this section are, “Strongly Agree,” “Agree,” Neither Agree nor Disagree,” “Disagree,” and “Strongly Disagree.”

Frequency table 34: I was treated in my opinion ‘fairly’ by my internship Supervisor

Value	N	%	Cumulative %
Strongly agree	14	29.79	29.79
Agree	20	42.55	72.34
Neither agree nor disagree	7	14.89	87.23
Disagree	3	6.38	93.62
Strongly disagree	3	6.38	100.00
Total	47.00	100.00	

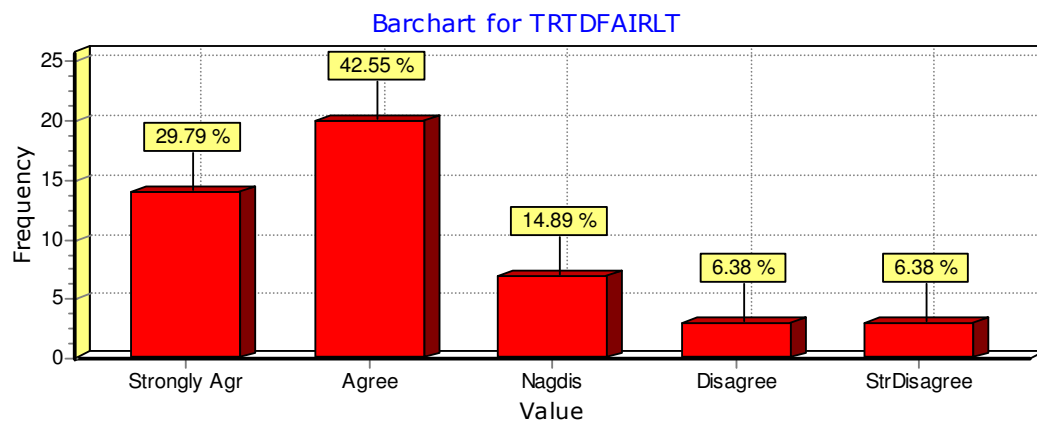


Figure 24: I was treated in my opinion ‘fairly’ by my internship Supervisor

Frequency table 34 and figure 24 indicate that 29.79% of the sample strongly agrees with the statement, “I was treated in my opinion ‘fairly’ by my internship supervisor,” the majority of the sample, that is, 42.55% agree, 14.89% neither agree nor disagree while 6.38% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.0035$ ($df=4$, $\chi^2=10.36$) which implies that there is a statistically significant difference between male and female respondents responses to the question with females being more likely to strongly agree and agree that, in their opinion, they were ‘fairly’ treated by their internship supervisors.

Frequency table 35: My supervisor delegated Biokinetic work effectively

Value	N	%	Cumulative %
Strongly agree	12	25.53	25.53
Agree	16	34.04	59.57
Neither agree nor disagree	9	19.15	78.72
Disagree	7	14.89	93.62
Strongly disagree	3	6.38	100.00
Total	47.00	100.00	

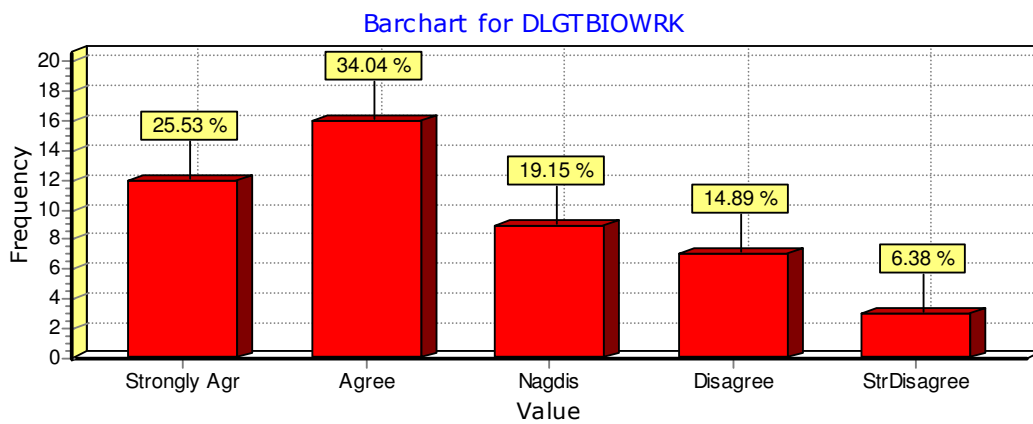


Figure table 25: My supervisor delegated Biokinetic work effectively

Frequency table 35 and figure 25 indicate that 25.53% of the sample strongly agrees with the statement, “My supervisor delegated Biokinetic work effectively,” the majority of the sample, that is, 34.04% agrees, 19.15% neither agree nor disagree while 14.89% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.118$ ($df=4$, $\chi^2=7.35$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 36: My supervisor was always available to me when I had questions

Value	N	%	Cumulative %
Strongly agree	11	23.40	23.40
Agree	20	42.55	65.96
Neither agree nor disagree	8	17.02	82.98
Disagree	5	10.64	93.62
Strongly disagree	3	6.38	100.00
Total	47	100.00	

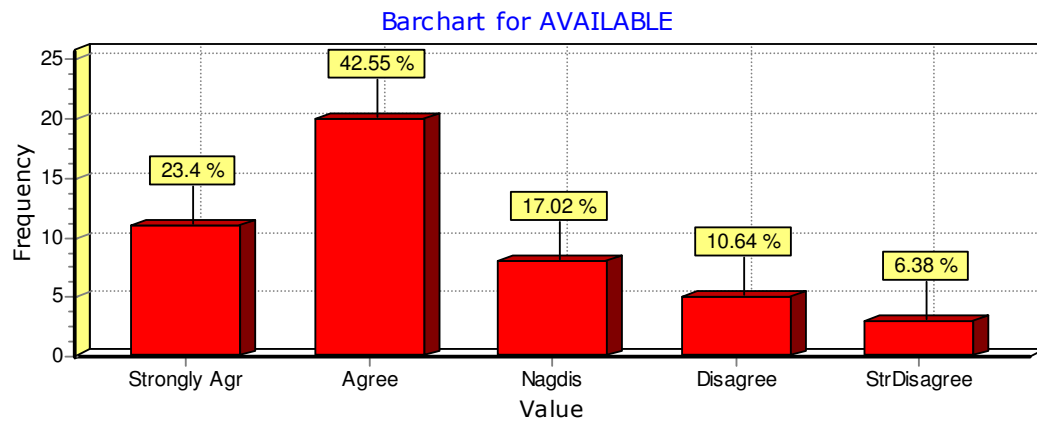


Figure 26: My supervisor was always available to me when I had questions

Frequency table 36 and figure 26 indicate that 23.4% of the sample strongly agrees with the statement, “My supervisor was always available to me when I had questions,” the majority of the sample, that is, 42.55% agrees, 17.02% neither agree nor disagree while 10.64% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if p is ≤ 0.0500 . In this case $p = 0.357$ ($df=4$, $\chi^2=4.38$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 37: Intern Biokineticists should receive better remuneration

Value	N	%	Cumulative %
Strongly agree	18	38.30	38.30
Agree	18	38,30	76.60
Neither agree nor disagree	8	17.02	93,62
Disagree	2	4.26	97.87
Strongly disagree	1	2.13	100.00
Total	47	100.00	

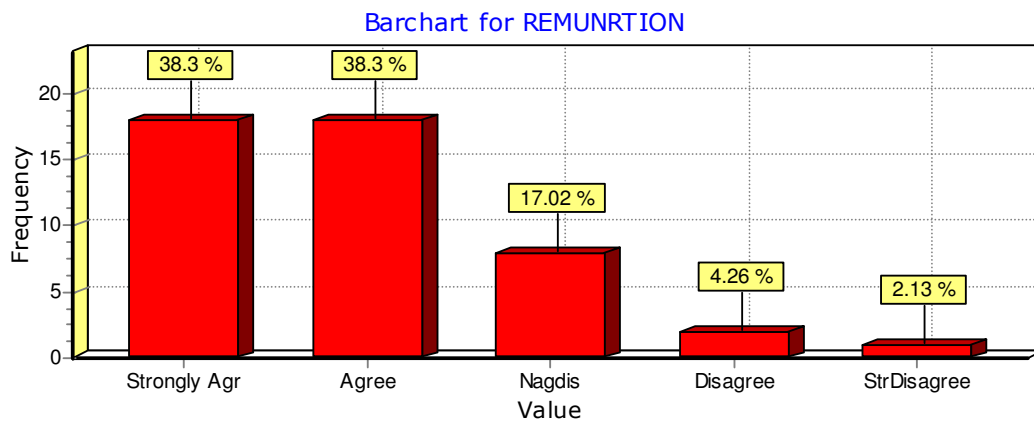


Figure table 27: Intern Biokineticists should receive better remuneration

Frequency table 37 and figure 27 indicate that 38.3% of the sample strongly agrees with the statement, “Intern Biokineticists should receive better remuneration,” the same number agree (38.3%), 17.02% neither agree nor disagree while 4.26% disagree and 2.13% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.167$ ($df=4$, $\chi^2=6.46$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 38: I feel free to express my opinions without worrying about negative actions/responses

Value	N	%	Cumulative %
Strongly agree	10	21.28	21.28
Agree	16	34.04	55.32
Neither agree nor disagree	14	29.79	85.11
Disagree	4	8.51	93.62
Strongly disagree	3	6.38	100.00
Total	47	100.00	

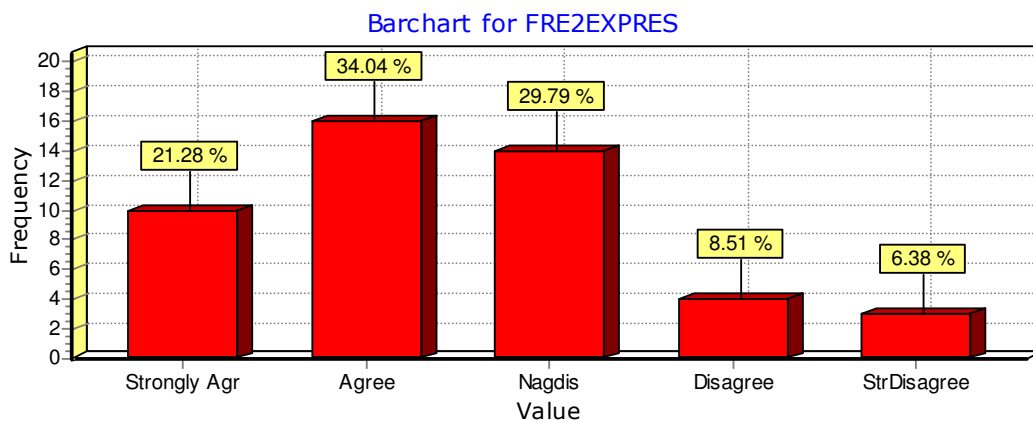


Figure table 28: I feel free to express my opinions without worrying about negative actions/responses

Frequency table 38 and figure 28 indicate that 21.28% of the sample strongly agrees with the statement, “I feel free to express my opinions without worrying about negative actions/responses,” the majority of the sample, that is, 34.04% agree, over a quarter that is, 29.79% neither agree nor disagree while 8.51% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.005$ ($df=4$, $\chi^2=14.68$) which implies that there is a statistically significant difference between male and female respondents responses to the question with females being more likely to strongly agree, or agree that, in their opinion, they ‘felt free’ to express their opinion without worrying about negative actions/responses from their employers.

Frequency table 39: Overall the work given to me was appropriate for an intern Biokineticist

Value	N	%	Cumulative %
Strongly agree	12	25.53	25.53
Agree	15	31.91	57.45
Neither agree nor disagree	10	21.28	78.72
Disagree	8	17.02	95.74
Strongly disagree	2	4.26	100.00
Total	47	100.00	

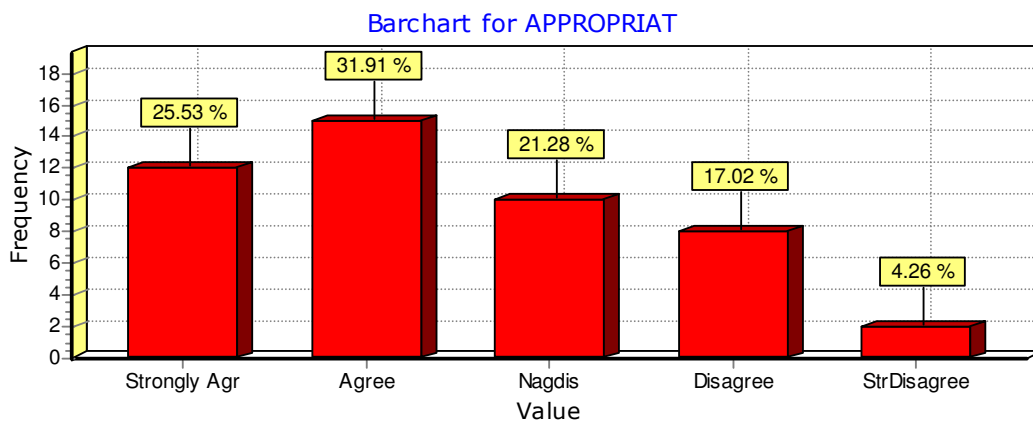


Figure 29: Overall the work given to me was appropriate for an intern Biokineticist

Frequency table 39 and figure 29 indicate that 25.53% of the sample strongly agrees with the statement, “Overall the work given to me was appropriate for an intern Biokineticist,” the majority that is, 31.91% agree, 21.28% neither agree nor disagree while 17.02% disagree and 4.26% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.732$ ($df=4$, $\chi^2=2.02$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 40: My working conditions were good

Value	N	%	Cumulative %
Strongly agree	15	31.91	31.91
Agree	18	38.30	70.21
Neither agree nor disagree	9	19.15	89.36
Disagree	4	8.51	97.87
Strongly disagree	1	2.13	100.00
Total	47	100.00	

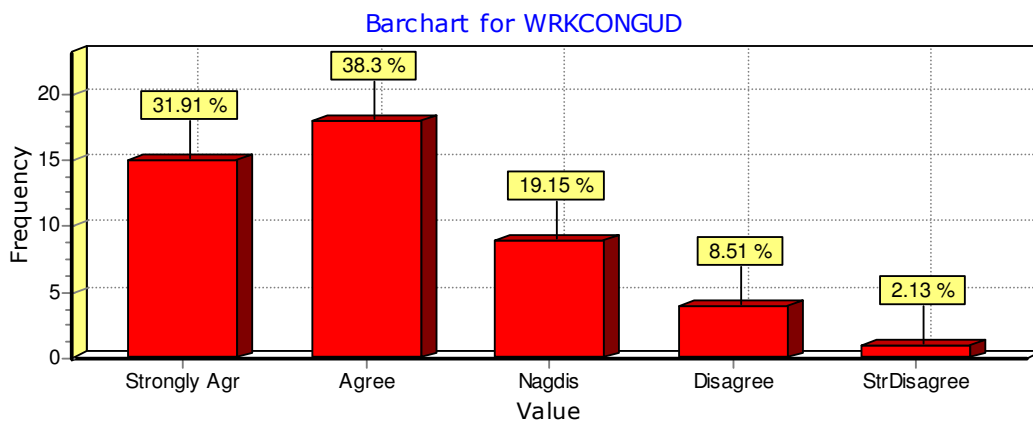


Figure 30: My working conditions were good

Frequency table 40 and figure 30 indicate that 31.91% of the sample strongly agrees with the statement, “My working conditions were good,” the majority that is, 38.3% agrees, 19.15% neither agree nor disagree while 8.51% disagree and 2.13% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.331$ ($df=4$, $\chi^2=4.60$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 41: My supervisor provided me with adequate feedback

Value	N	%	Cumulative %
Strongly agree	11	23.40	23.40
Agree	15	31.91	55.32
Neither agree nor disagree	12	25.53	80.85
Disagree	7	14.89	95.74
Strongly disagree	2	4.26	100.00
Total	47	100.00	

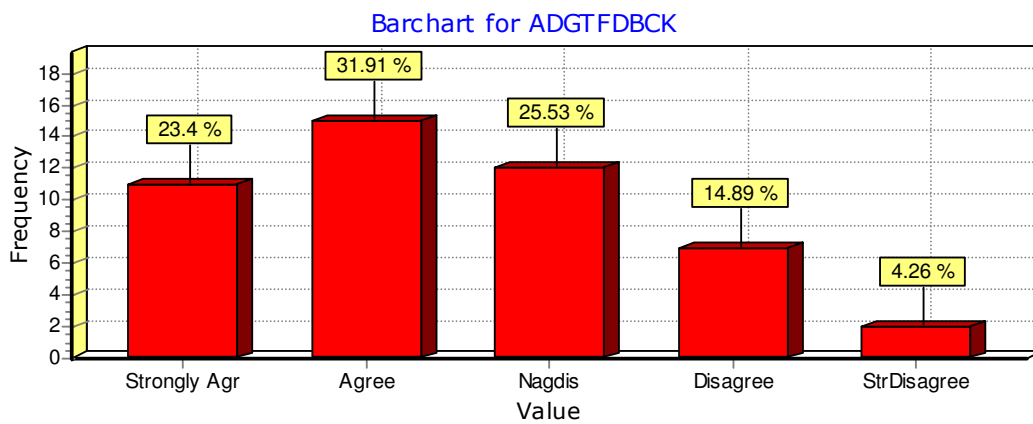


Figure 31: My supervisor provided me with adequate feedback

Frequency table 41 and figure 31 indicate that 23.4% of the sample strongly agrees with the statement, “My supervisor provided me with adequate feedback,” the majority that is, 31.91% agrees, 25.53% neither agree nor disagree while 14.89% disagree and 4.26% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.0451$ ($df=4$, $\chi^2=9.76$) which implies that there is a statistically significant difference between male and female respondents responses to the question with males being more likely to disagree or strongly disagree that, in their opinion, their supervisor provided them with ‘adequate feedback.’

Frequency table 42: I knew what was expected of me in my internship

Value	N	%	Cumulative %
Strongly agree	12	25.53	25.53
Agree	15	31.91	57.45
Neither agree nor disagree	8	17.02	74.47
Disagree	10	21.28	95.74
Strongly disagree	2	4.26	100.00
Total	47	100.00	

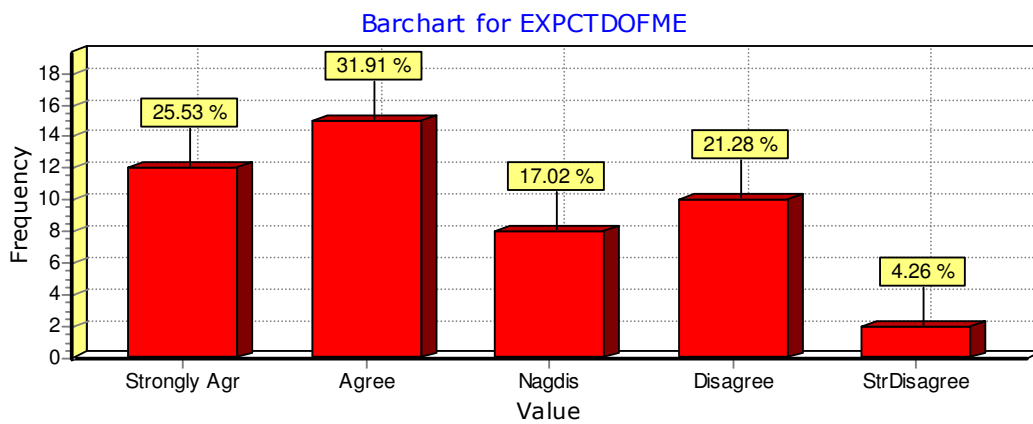


Figure 32: I knew what was expected of me in my internship

Frequency table 42 and figure 32 indicate that 25.53% of the sample strongly agrees with the statement, “I knew what was expected of me in my internship,” the majority that is, 31.91% agrees, 17.02% neither agree nor disagree while 21.28% disagree and 4.26% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.234$ ($df=4$, $\chi^2=5.56$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 43: My supervisor /employer recognised my achievement when I did a good job

Value	N	%	Cumulative %
Strongly agree	11	23.40	23.40
Agree	13	27.66	51.06
Neither agree nor disagree	13	27.66	78.72
Disagree	7	14.89	93.62
Strongly disagree	3	6.38	100.00
Total	47	100.00	

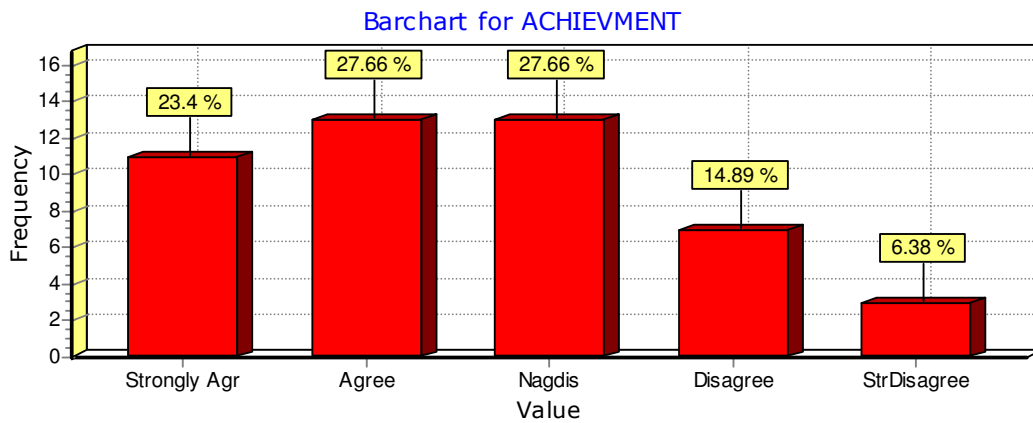


Figure 33: My supervisor /employer recognised my achievement when I did a good job

Frequency table 43 and figure 33 indicate that 23.4% of the sample strongly agrees with the statement, “My supervisor/employer recognised my achievement when I did a good job,” 27.66% agree and the same number 27.66% neither agree nor disagree while 14.89% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.837$ ($df=4$, $\chi^2=1.44$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 44: My working hours were fair

Value	N	%	Cumulative %
Strongly agree	12	25.53	25.53
Agree	20	42.55	68.09
Neither agree nor disagree	2	4.26	73.34
Disagree	7	14.89	87.23
Strongly disagree	6	12.77	100.00
Total	47	100.00	

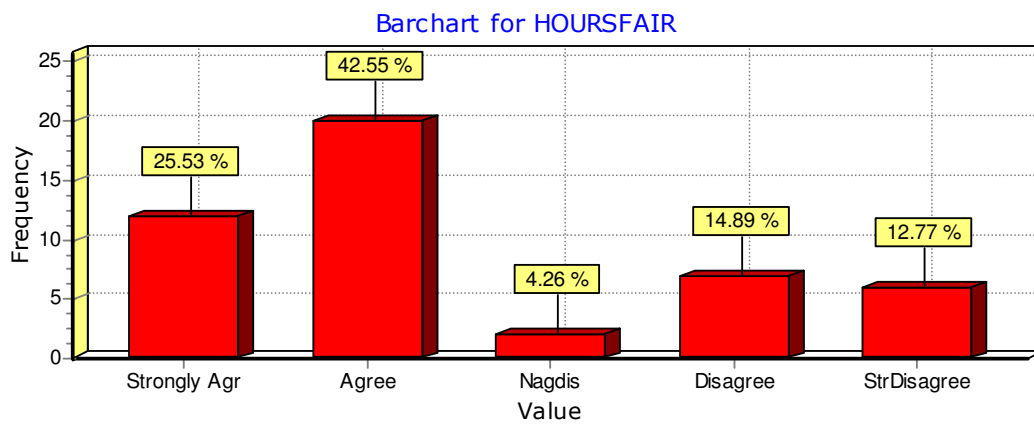


Figure 34: My working hours were fair

Frequency table 44 and figure 34 indicate that 25.53% of the sample strongly agrees with the statement, “My working hours were fair,” the majority that is, 42.55% agrees, 4.26% neither agree nor disagree while 14.89% disagree and 12.77% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.166$ ($df=4$, $chi\text{-square}=6.48$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 45: There is an increasing demand for Biokinetic services

Value	N	%	Cumulative %
Strongly agree	10	21.28	21.28
Agree	26	55.32	76.60
Neither agree nor disagree	6	12.77	89.36
Disagree	4	8.51	97.87
Strongly disagree	1	2.13	100.00
Total	47	100.00	

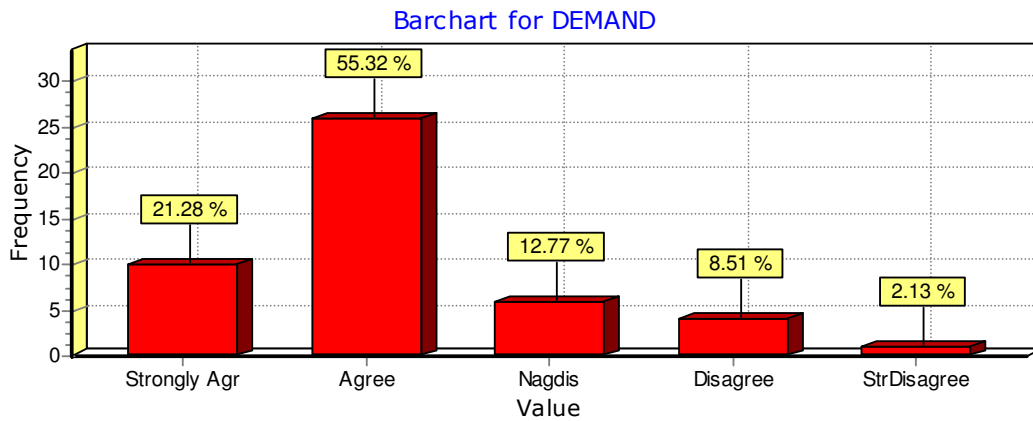


Figure 35: There is an increasing demand for Biokinetic services

Frequency table 45 and figure 35 indicate that 21.28% of the sample strongly agrees with the statement, “There is an increasing demand for Biokinetic services,” the majority that is, 55.32% agrees, 12.77% neither agree nor disagree while 8.51% disagree and 2.13% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.055$ ($df=4$, $\chi^2=9.27$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 46: I felt adequately trained after leaving university and entering my internship

Value	N	%	Cumulative %
Strongly agree	8	17.02	17.02
Agree	16	34.04	51.06
Neither agree nor disagree	11	23.40	74.47
Disagree	9	19.15	93.62
Strongly disagree	3	6.38	100.00
Total	47	100.00	

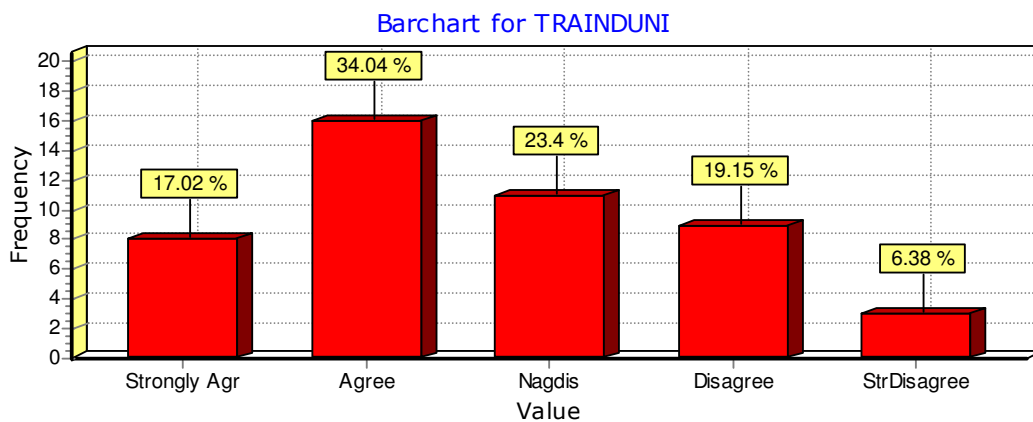


Figure 36: I felt adequately trained after leaving university and entering my internship

Frequency table 46 and figure 36 indicate that 17.02% of the sample strongly agrees with the statement, “I felt adequately trained after leaving university and entering my internship,” the majority that is, 34.04% agrees, 23.4% neither agree nor disagree while 19.15% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.720$ ($df=4$, $\chi^2=2.08$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 47: I felt adequately trained after leaving my internship

Value	N	%	Cumulative %
Strongly agree	11	23.40	23.40
Agree	20	42.55	65.96
Neither agree nor disagree	20	42.55	65.96
Disagree	8	17.02	93.62
Strongly disagree	3	6.38	100.00
Total	47	100.00	

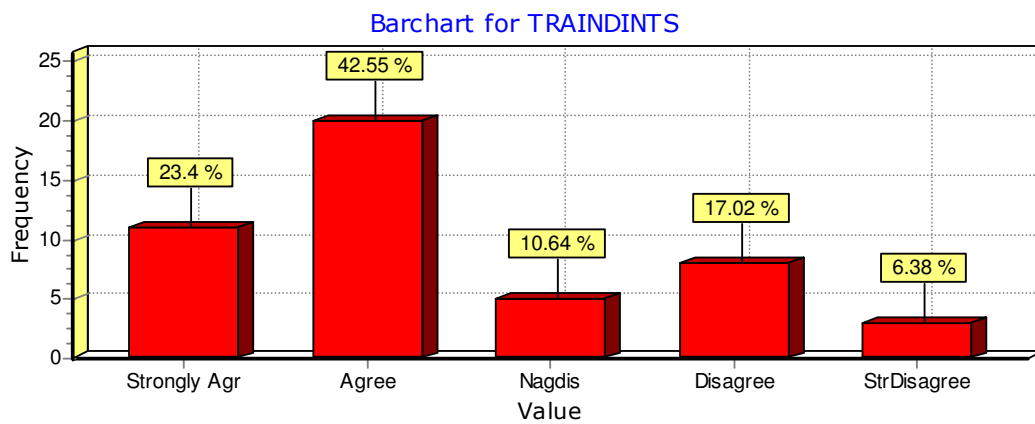


Figure 37: I felt adequately trained after leaving my internship

Frequency table 47 and figure 37 indicate that 23.4% of the sample strongly agrees with the statement, “I felt adequately trained after leaving my internship,” the majority that is, 42.55% agrees, 10.64% neither agree nor disagree while 17.02% disagree and 6.38% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.666$ ($df=4$, $\chi^2=2.38$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 48: I received holidays but was not paid

Value	N	%	Cumulative %
Strongly agree	6	12.77	12.77
Agree	4	8.51	21.28
Neither agree nor disagree	8	17.02	38.30
Disagree	16	34.04	72.34
Strongly disagree	13	27.66	100.00
Total	47	100.00	

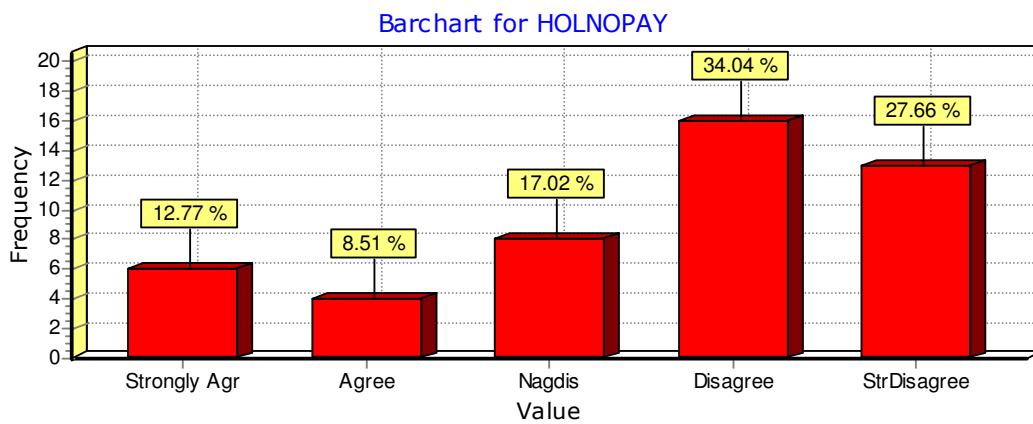


Figure 38: I received holidays but was not paid

Frequency table 48 and figure 38 indicate that 12.77% of the sample strongly agrees with the statement, “I received holidays but was not paid,” 8.51% agree, 17.02% neither agree nor disagree, the majority that is, 34.04% disagrees and 27.66% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.092$ ($df=4$, $\chi^2=7.98$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 49: I received holidays and was paid during my break

Value	N	%	Cumulative %
Strongly agree	14	29.79	29.79
Agree	16	34.04	63.83
Neither agree nor disagree	5	10.64	74.47
Disagree	5	10.64	85.11
Strongly disagree	7	14.89	100.00
Total	47	100.00	

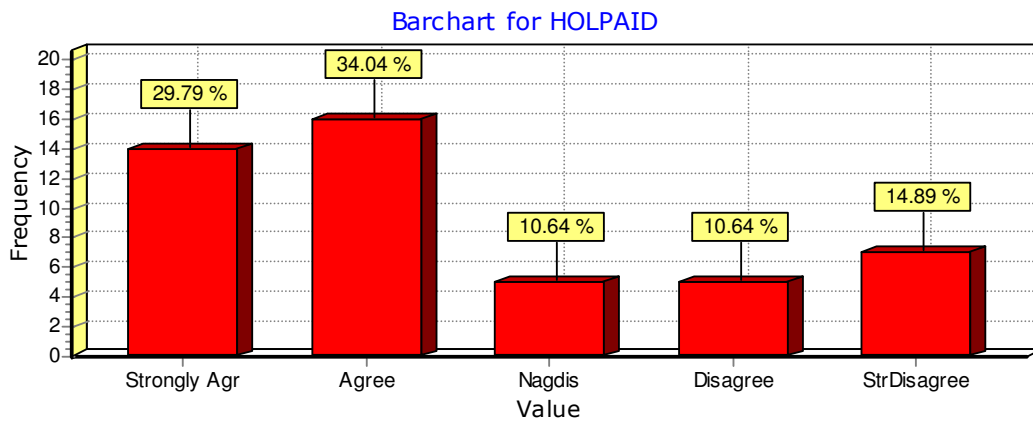


Figure 39: I received holidays and was paid during my break

Frequency table 49 and figure 39 indicate that 29.79% of the sample strongly agrees with the statement, “I received holidays and was paid,” the majority that is, 34.04% agree, 10.64% neither agree nor disagree, 10.64% disagree and 14.89% strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.081$ ($df=4$, $\chi^2=8.30$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

Frequency table 50: I was asked to do things that I would consider unethical in terms of the ethical guidelines for the practice of Biokinetics

Value	N	%	Cumulative %
Strongly agree	2	4.26	4.26
Agree	6	12.77	17.02
Neither agree nor disagree	7	14.89	31.91
Disagree	11	23.40	55.32
Strongly disagree	21	44.68	100.00
Total	47	100.00	

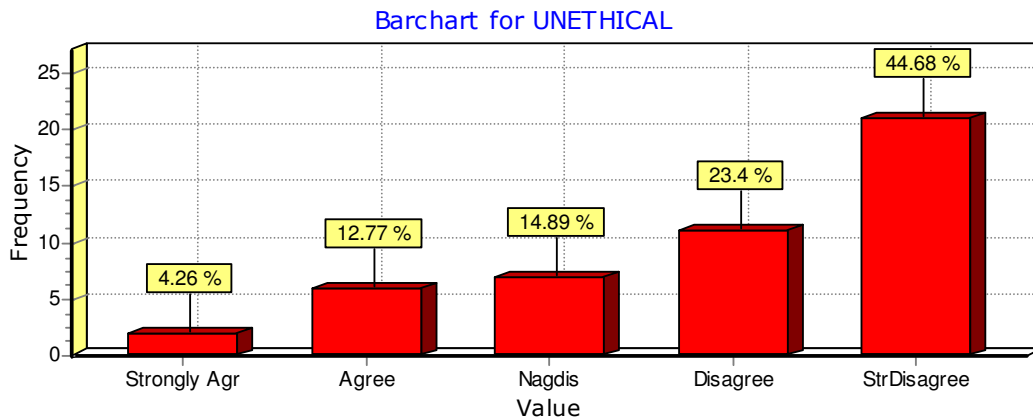


Figure 40: I was asked to do things that I would consider unethical in terms of the ethical guidelines for the practice of Biokinetics

Frequency table 50 and figure 40 indicate that 4.26% of the sample strongly agrees with the statement, “I was asked to do things that I would consider unethical in terms of the ethical guidelines for the practice of Biokinetics,” 12.77% agree, 14.89% neither agree nor disagree, 23.4% disagree and the majority, that is 44.68%, strongly disagree with the statement. A chi-square test was used to see if there is a significant difference between the male and female groups, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.461$ ($df=4$, $\chi^2=3.61$) which implies that there is no statistically significant difference between male and female respondents responses to the question.

4.5 Section 4: Biokinetic evaluations and auxiliary information

Section 4 presents data that deals with the minimum standards (guidelines) for the amount and type of evaluations that intern Biokineticists must complete in their internship year according the HPCSA (PPB).

The results for evaluations is presented in tabular format as “Less” indicating the respondents who completed less than the minimum of evaluations required; “Equal” indicating the respondents who completed the minimum number of evaluations required and, “More,” indicating the respondents who completed more than the minimum number of (guideline) evaluations required. Other results for auxiliary or supporting information in this section are presented as frequency tables.

Table 1: Biokinetics evaluations

Category and minimum number of assessments	Less	Equal	More	Total
Healthy individuals (50)	8 (17.02%)	18 (38.3%)	21 (44.68%)	47 (100%)
Individuals at risk				
Cardiovascular/Pulmonary (40)	13 (27.66%)	19 (40.43%)	15 (31.91%)	47 (100%)
Metabolic (25)	11 (23.40%)	17 (36.17%)	19 (40.43%)	47 (100%)
Orthopaedic (25)	4 (8.51%)	13 (27.66%)	30 (63.83%)	47 (100%)
Individuals for final phase rehabilitation				
Cardiovascular/Pulmonary (25)	12 (25.53%)	18 (38.30%)	17 (36.17%)	47 (100%)
Metabolic (15)	10 (21.28%)	20 (42.55%)	17 (36.17%)	47 (100%)
Disabled (10)	19 (40.43)	14 (29.79)	14 (29.79)	47 (100%)
Orthopaedic final phase rehabilitation				
Foot/ankle/lower leg (10)	7 (14.89%)	16 (34.04%)	24 (51.06%)	47 (100%)
Knee/thigh (10)	1 (2.13%)	10 (21.28%)	36 (76.70)	47 (100%)
Hip (5)	3 (6.38%)	18 (38.30%)	26(55.32%)	47 (100%)
Back (10)	1 (2.13%)	7 (14.89%)	39 (82.98)	47 (100%)
Neck (5)	6 (12.77%)	20 (42.55%)	21 (44.68)	47 (100%)
Arm/Hand	19 (40.43%)	16 (34.04%)	12 (25.53%)	47 (100%)

Table 51 indicates that 39 respondents (82.97%) did the minimum required number of guideline evaluations or more on healthy individuals while 8 (17.02%) did less than the required number. Thirty four (34) respondents (72.34%) did the minimum required number of evaluations or more on cardiovascular/pulmonary clients while 13 or (27.66%) did less. Thirty six (36) respondents (76.59%) did the minimum amount of required evaluations or more on clients with metabolic disorders while 11 (23.40%) did less. For orthopaedic disorders 43 respondents (91.48%) did the minimum amount of evaluations or more while 4 (8.51%) did less. In the category final phase rehabilitation 35 (74.46%) of respondents did the minimum number or more of the required evaluations for cardiovascular/pulmonary while 12 (25.53%) did less. In the category, for metabolic disorder, 37 (78.72%) respondents did the minimum number or more evaluations while 10 (21.28%) did less. For the disabled category 20 (59.57%) of the respondents did the minimum number of evaluations or more while 19 (40.43%) did less. In the orthopaedic category for final phase rehabilitation 40 (85.10%) did the minimum amount of guideline evaluations or more for foot/ankle/lower leg and 7 (14.89%) did less. In this category, for knee/thigh evaluations 46 (97.87%) of respondents did the minimum amount of evaluations while 1 (2.13%) did less. Forty four (44) respondents (93.61%) did the minimum number or more of evaluations for hips while 3 (6.38%) did less. Forty six (46) respondents (97.87%) did the minimum number of evaluations or more for backs while 1 (2.13%) did less. For necks 41 (87.23%) did the minimum number of evaluations or more while 6 (2.77%) did less evaluations than the minimum number required. In the category arm/hand 28 (59.57%) of respondents did the minimum number of evaluations or more while 19 (40.43%) did less.

Frequency table 51: Length of internship programme

Value	N	%	Cumulative %
Too short	10	21.28	21.28
A year is long enough	35	74.74	95.74
Too long	2	4.26	100.00
Total	47	100.00	

Frequency table 51 indicates that 10 respondents (21.28%) felt that the internship programme was too short, 35 (74.74%) felt it was long enough and 2 (4.26%) felt that it was too long.

Frequency table 52: Did your supervisor let you perform any additional assessments/evaluations even though the HPCSA requirements were met

Value	N	%	Cumulative %
Yes	22	46.81	46.81
No	25	53.19	100.00
Total	47	100.00	

Frequency table 52 indicates that just under a half (46.81%) of respondents had performed additional evaluations, as well as the minimum number of required evaluations during their internship year, while over a half (53.19%) had not.

Frequency table 53: Do you feel that a standardised “board” exam should be written at the end of your internship year?

Value	N	%	Cumulative %
Yes	32	68.09	68.09
No	15	31.91	100.00
Total	47	100.00	

Frequency table 53 indicates that 68.09% of respondents answered “Yes” they feel that a standardised “board” exam should be written at the end of the internship year while 31.91% answered “No” this type of exam should not be written should not be written at the end of the internship year.

Frequency table 54: How did you get remunerated (paid) for your internship?

Value	N	%	Cumulative %
Salary	40	85.11	85.11
Commission	1	2.13	87.23
Basic salary + commission	6	12.77	100.00
Total	47	100.00	

Frequency table 54 indicates that the majority of respondents (85.11%) were paid by salary during their internship year while 2.13% were paid by commission and 12.77% paid by a basic salary plus a commission.

Frequency table 55: On average how much did you earn per month during your internship?

Value	N	%	Cumulative %
Less than R1500	1	2.13	2.13
R1500 – R2999	16	34.04	36.17
R3000 – R4999	16	34.04	70.21
R5000 – R10000	12	25.53	95.74
R10000 +	2	4.26	100.00
Total	47	100.00	

Frequency table 55 indicates that 2.13% of respondents were paid less than R1500 while 34.04% were paid between R1500 and R2999 and the same percentage (34.04%) paid between R3000 and R4999 during their internship year. Twenty five point five three percent (25.43%) of respondents were paid between R5000 and R10000 and 4.26% paid over R10000 a month during their internship year.

Frequency table 56: Are you currently practicing as a Biokineticist?

Value	N	%	Cumulative %
Yes	41	87.23	87.23
No	7	14.89	100.00
Total	47	100.00	

Frequency table 56 indicates that the majority of respondents who completed their internships and who responded to this questionnaire are practicing as Biokineticists (87.23%) while 14.89% are not.

4.6 Questionnaire 2: Supervising Biokineticists

This questionnaire was filled in by Biokineticists who are accredited to supervise intern Biokineticists. The questionnaire was based on a non-copyright internship evaluation form from High Point University (2011) in the USA. Results are reported using frequency tables and figures plus chi-square results for any significant differences (marked effects are significant if $p \leq 0.0500$) between male and female supervising Biokineticists in their evaluation of intern Biokineticists.

4.6.1 Demographics for Supervising Biokineticists

The following frequency tables present the results for the demographic data of the supervising Biokineticists (N =20, SD = 6.69).

Frequency table 57: Sex (Supervising Biokineticists)

Value	N	%	Cumulative %
Female	12	60	60
Male	8	40	100.00
Total	20	100.00	

Frequency table 58 and figure 58 indicate that 60% of the supervising Biokineticists who responded to the survey were female and 40% male.

Frequency table 58: Age (Supervising Biokineticists)

Value	N	%	Cumulative %
25 -29 years	2	10.00	10.00
30 – 34 years	6	30.00	40.00
35 – 39 years	5	25.00	65.00
40 – 44 years	2	10.00	75.00
45 – 49 years	5	25.00	100.00
Total	20	100.00	

Frequency table 58 indicates that 10% of the supervising Biokineticists who responded to the questionnaire were 25 – 29 years old, 30% were 30 – 34 years old, 25% were 35 – 39 years old, 10% were 40 – 44 years old and 25% were 45 - 49 years old.

Frequency table 59: Race (Supervising Biokineticists)

Value	N	%	Cumulative %
Indian	5	25.00	25.00
White	15	75.00	100.00
Total	20	100.00	65.00

Frequency table 59 indicates that 20% of the supervising Biokineticists who responded to the questionnaire were Indian/Asian and 80% were white.

Frequency table 60: Province (Supervising Biokineticists)

Value	N	%	Cumulative %
Eastern Cape (EC)	3	15.00	15.00
Gauteng (GP)	8	40.00	55.00
Kwazulu-Natal (KZN)	4	20.00	75.00
Limpopo (L)	1	5.00	80.00
North West (NW)	1	5.00	85.00
Northern Cape (NC)	1	5.00	90.00
Western Cape (WC)	2	10.00	100.00
Total	20	100.00	

Frequency table 60 indicates that 15% of the sample of supervising Biokineticists reside in the Eastern Cape, 35% reside in Gauteng, 20% reside in KwaZulu-Natal, 5.00% reside in Limpopo and 5% reside in the North West Province and finally 5% reside in the Northern Cape and 10% reside in the Western Cape.

Frequency table 61: City/Town (Supervising Biokineticists)

Value	N	%	Cumulative %
Johannesburg (Jhb)	7	35.00	35.00
Pretoria (Pta)	1	5.00	40.00
Cape Town (CT)	2	10.00	50.00
Durban (Dbn)	4	20.00	70.00
Polokwane (Pkwne)	1	5.00	75.00
Port Elizabeth (PE)	3	15.00	90.00
Upington (Up)	1	5.00	95.00
Potchefstroom (Potch)	1	5.00	100.00
Total	20	100.00	

Frequency table 61 indicates that 35% of the supervising Biokineticists who responded to the questionnaire reside, and by inference work in the following towns or cities, Johannesburg, 5% live in Pretoria, 10% reside in Cape Town, 20% reside in Durban, 5% reside in Polokwane, 15.00% reside in Port Elizabeth, 5% reside in Upington and 5% reside in Potchefstroom.

Frequency table 62: Location of accredited practice

Value	N	%	Cumulative %
Urban	20	100.00	100.00
Rural	0	0.00	
Total	20	100.00	

Frequency table 62 indicates that all (100%) the supervising Biokineticists who responded to the questionnaire have accredited practices in urban locations.

Frequency table 63: In what year were you first accredited to take interns?

Value	N	%	Cumulative %
1990 – 1994	3	15.00	15.00
2005 – 2009	14	70.00	85.00
2010 – 2014	3	15.00	100.00
Total	20	100.00	

Frequency table 63 indicates that 15% of the supervising Biokineticists who responded to the questionnaire were first accredited to take interns between the years 1990 – 1994, 60.00% were accredited between the years 2005 – 2009 and 25.00% were accredited between the years 2010 – 2014.

Frequency table 64: How many interns have you supervised since first accredited?

Value	N	%	Cumulative %
1 - 4	14	70.00	70.00
5 – 9	2	10.00	80.00
20+	4	20.00	100.00
Total	20	100.00	

Frequency table 64 indicates that 70% of the supervising Biokineticists who responded to the survey had supervised between 1 – 4 interns since becoming accredited, 10% had supervised between 5 – 9 interns and 20% had supervised 20+ intern Biokineticists since becoming accredited.

Frequency table 65: How many interns are you accredited to take?

Value	N	%	Cumulative %
1	9	45.00	45.00
2	4	20.00	65.00
3	2	10.00	75.00
5+	5	25.00	100.00
Total	20	100.00	

Frequency table 65 indicates that 45% of the supervising Biokineticists work in practices that are accredited to take 1 intern, 20% work in practices that are accredited to take 2 interns, 10% work in practices that are accredited to take 3 interns while 5 work in practices that are accredited to take more than 5 interns.

Frequency table 66: Are you currently still training interns?

Value	N	%	Cumulative %
Yes	14	70.00	70.00
No	6	30.00	100.00
Total	20	100.00	

Frequency table 66 indicates that 70% of the supervising Biokineticists who answered the questionnaire are still supervising interns and 30% are not.

4.6.2 Evaluation of intern Biokineticists by Supervising Biokineticists

The results for the evaluation of interns by Supervising Biokineticists are presented as frequency tables and figures. A Likert type scale was utilised using the responses 1 = “Very Unsatisfactory,” 2 = “Unsatisfactory,” 3 = “Fair,” 4 = “Commendable,” and 5 = “Exceptional.”

- **Ability to learn**

Frequency table 67: Asks relevant questions

Value	N	%	Cumulative %
Fair	6	30.00	30.00
Commendable	12	60.00	90.00
Exceptional	2	10.00	100.00
Total	20	100.00	

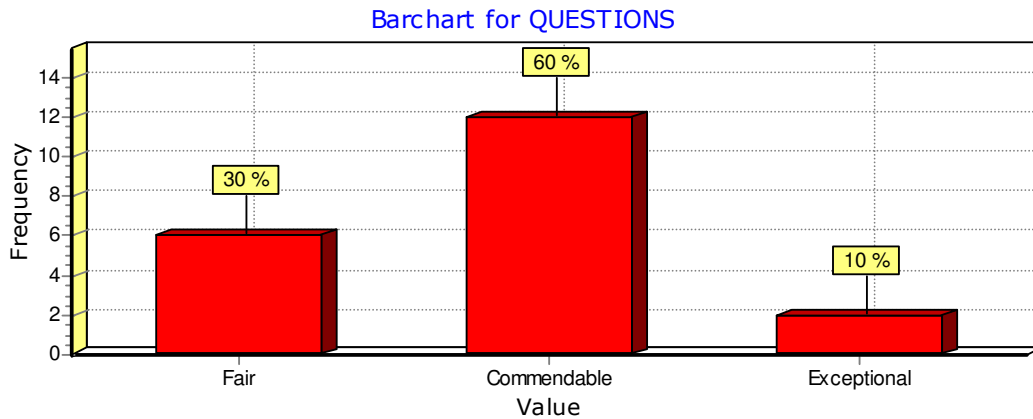


Figure 41: Asks relevant questions

Frequency table 67 and figure 41 indicate that 30% of the supervising Biokineticists who completed the survey reported that the interns ability to, “ask relevant questions,” was fair, 60% thought it commendable and 10% thought it exceptional. A Chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to “ask relevant questions”, marked effects are significant if $p \leq 0.0500$. In this case $p = 0.757$ ($df=2$, $chi\text{-square}=0.56$) which implies that there is no statistically significant difference.

Frequency table 68: Seeks out and utilises appropriate resources

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	8	40.00	50.00
Commendable	6	30.00	80.00
Exceptional	4	20.00	100.00
Total	20	100.00	

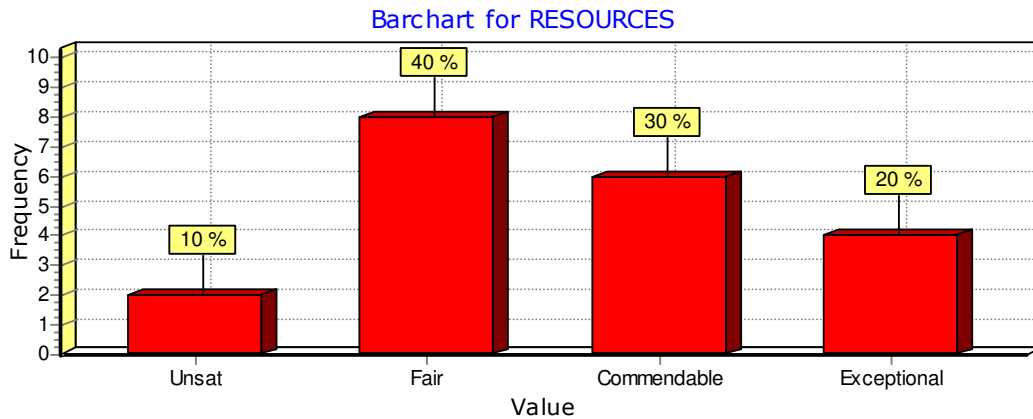


Figure 42: Seeks out and utilises appropriate resources

Frequency table 68 and figure 42 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns ability to, “seek out and utilise appropriate resources,” was unsatisfactory, 40% thought it fair, 30% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to “seek out and utilise appropriate resources,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.394$ ($df=3$, $\chi^2=2.99$) which implies that there is no statistically significant difference.

Frequency table 69: Accepts responsibility for mistakes and learns from experiences

Value	N	%	Cumulative %
Fair	2	10.00	10.00
Commendable	7	35.00	45.00
Exceptional	11	55.00	100.00
Total	20	100.00	

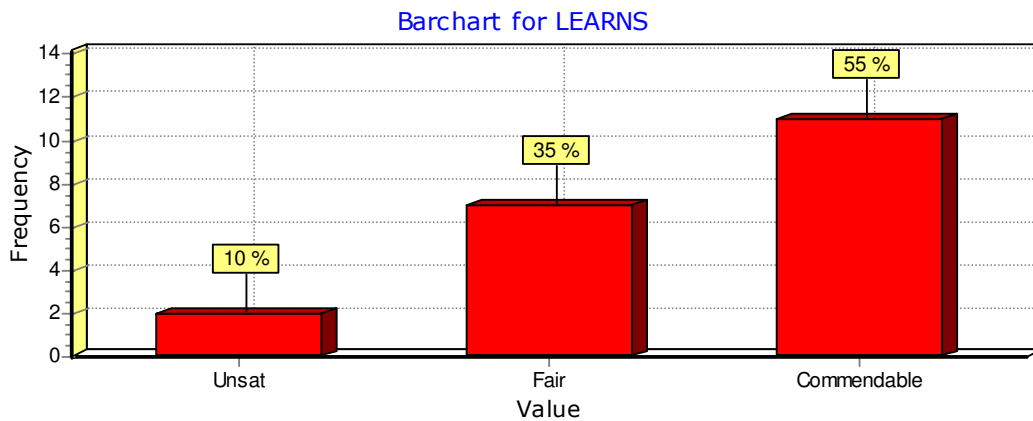


Figure 43: Accepts responsibility for mistakes and learns from experiences

Frequency table 69 and figure 43 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns ability to “accept responsibility for mistakes and learns from experience, ”was fair, 35% thought it commendable and 55% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to “accept responsibility for mistakes and learn from experience,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.920$ ($df=2$, $\chi^2=0.17$) which implies that there is no statistically significant difference.

- **Reading/report writing/computer skills**

Frequency table 70: Reads/comprehends/follows written materials/instructions

Value	N	%	Cumulative %
Fair	5	25.00	25.00
Commendable	12	60.00	85.00
Exceptional	5	15.00	100.00
Total	20	100.00	

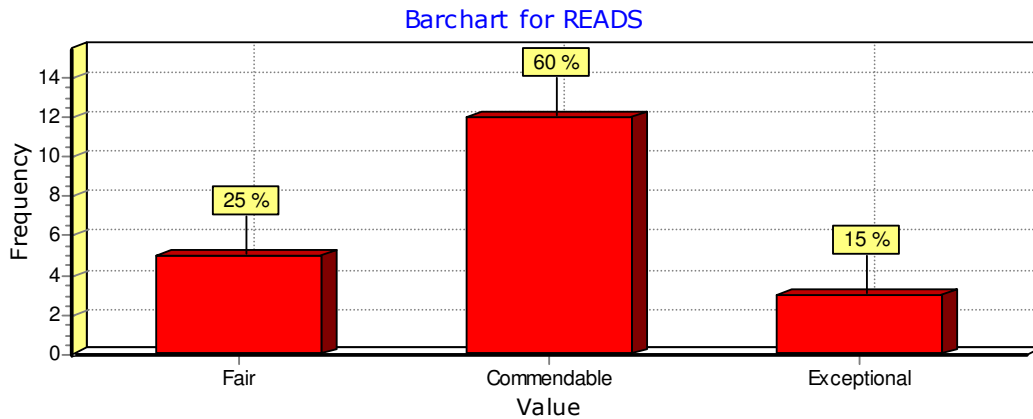


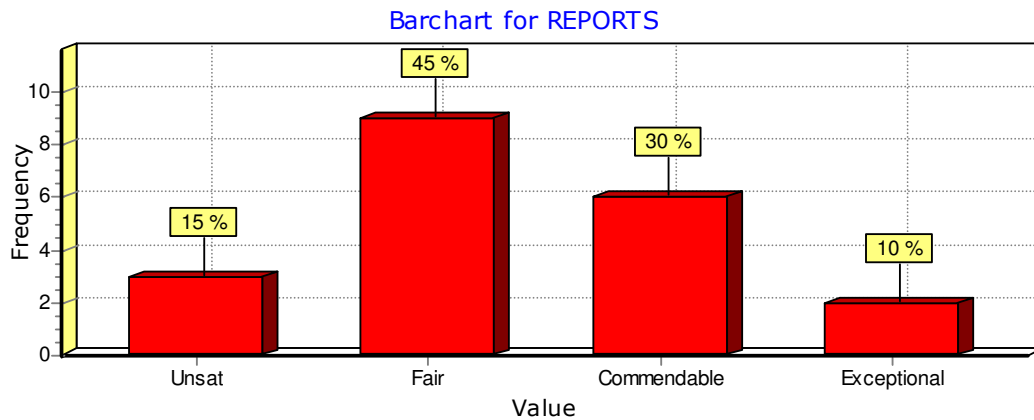
Figure 44: Reads/comprehends/follows written materials/instructions

Frequency table 70 and figure 43 indicate that 25% of the supervising Biokineticists who completed the survey reported that the interns ability to “read/comprehends/follows written materials/instructions,” was fair, 60% thought it commendable and 15% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “read/comprehend/follows written materials/instructions,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.966$ ($df=2$, $\chi^2=0.07$) which implies that there is no statistically significant difference.

Frequency table 71: Writes coherent reports using appropriate computer programmes

Value	N	%	Cumulative %
Unsatisfactory	3	15,00	15,00
Fair	9	45,00	60,00
Commendable	6	30,00	90,00
Exceptional	2	10,00	100,00
Total	20	100,00	

Figure 45: Writes coherent reports using appropriate computer programmes



Frequency table 71 and figure 45 indicate that 15% of the supervising Biokineticists who completed the survey reported that the interns ability to, “write coherent reports using appropriate computer programmes,” was unsatisfactory, 45% thought it fair, 30% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to “write coherent reports using appropriate computer programmes,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.634$ ($df=3$, $\chi^2=1.71$) which implies that there is no statistically significant difference.

Frequency table 72: Is able to work with mathematical procedures relevant to Biokinetics

Value	N	%	Cumulative %
Fair	8	40.00	50.00
Commendable	11	55.00	95.00
Exceptional	1	5.00	100.00
Total	20	100.00	

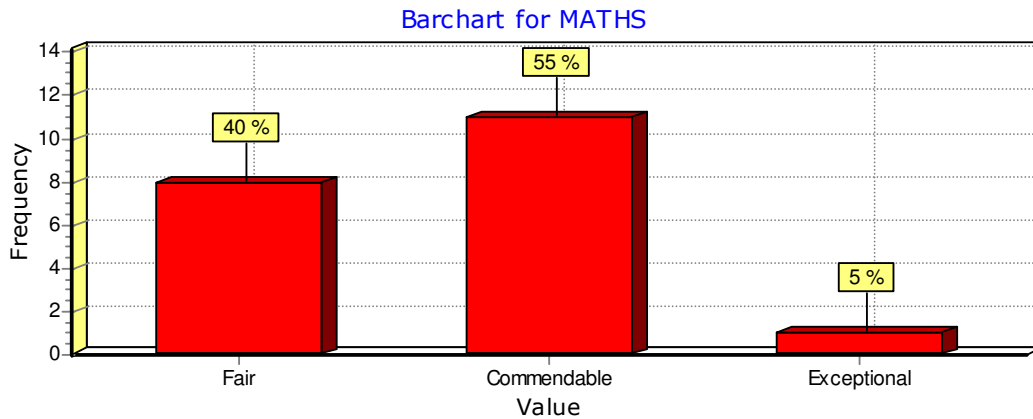


Figure 46: Is able to work with mathematical procedures relevant to Biokinetics

Frequency table 72 and figure 46 indicate that 40% of the supervising Biokineticists who completed the survey reported that the interns ability to be “able to work with mathematical procedures relevant to Biokinetics,” was fair, 55% thought it commendable and 5% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be, “able to work with mathematical procedures relevant to Biokinetics,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.454$ ($df=2$, $\text{chi-square}=1.58$) which implies that there is no statistically significant difference.

- **Listening and oral communication skills**

Frequency table 73: Listens to clients in an active and attentive manner

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	4	20.00	30.00
Commendable	9	45.00	75.00
Exceptional	5	25.00	100.00
Total	20	100.00	

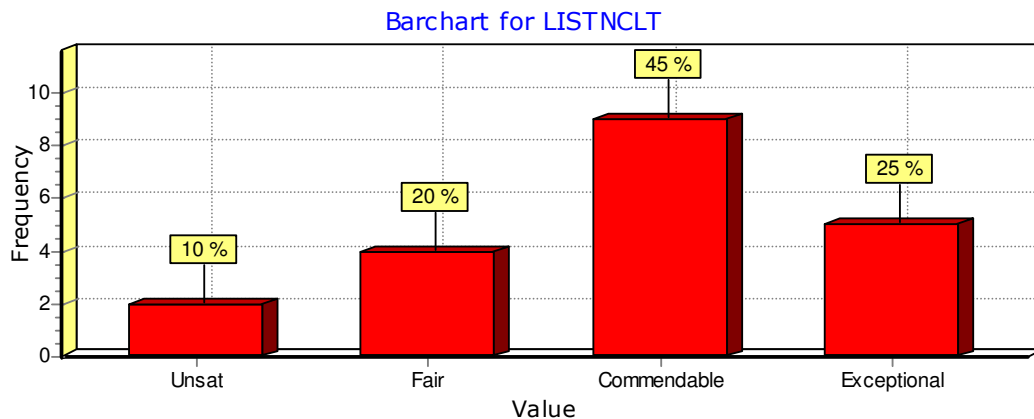


Figure 47: Listens to clients in an active and attentive manner

Frequency table 73 and figure 47 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns ability to, “listen to clients in an active and attentive manner,” “was unsatisfactory, 20% thought it fair, 45% thought it commendable and 25% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to “listen to clients in an active and attentive manner,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.634$ ($df=3$, $\chi^2=1.71$) which implies that there is no statistically significant difference.

Frequency table 74: Listens to the supervising Biokineticist in an active and attentive manner

Value	N	%	Cumulative %
Fair	4	20.00	20.00
Commendable	12	60.00	80.00
Exceptional	4	20.00	100.00
Total	20	100.00	

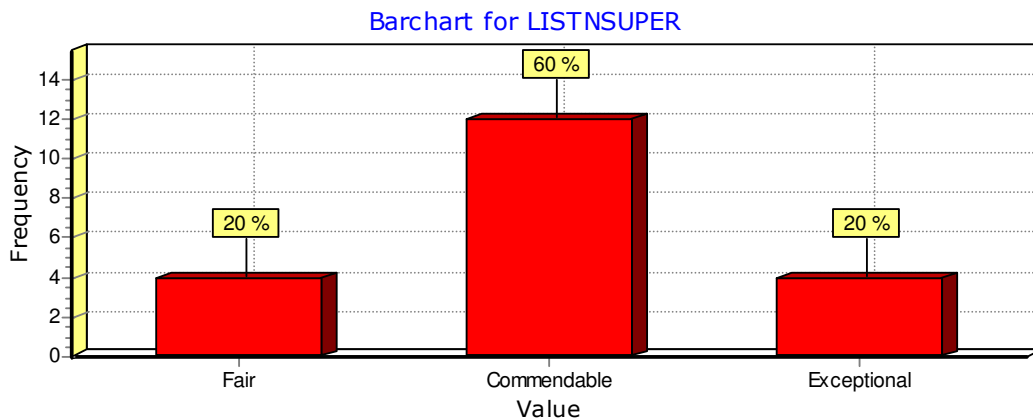


Figure 48: Listens to the supervising Biokineticist in an active and attentive manner

Frequency table 74 and figure 48 indicate that 20% of the supervising Biokineticists who completed the survey reported that the interns ability to, “listen to the supervising Biokineticist in an active and attentive manner,” was fair, 60% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “listen to the supervising Biokineticist in an active and attentive manner, “marked effects are significant if $p \leq 0.0500$. In this case $p = 0.757$ ($df=2$, $\text{chi-square}=0.56$) which implies that there is no statistically significant difference.

Frequency table 75: Demonstrates effective verbal communication skills

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	5	25.00	35.00
Commendable	7	35.00	70.00
Exceptional	6	30.00	100.00
Total	20	100.00	

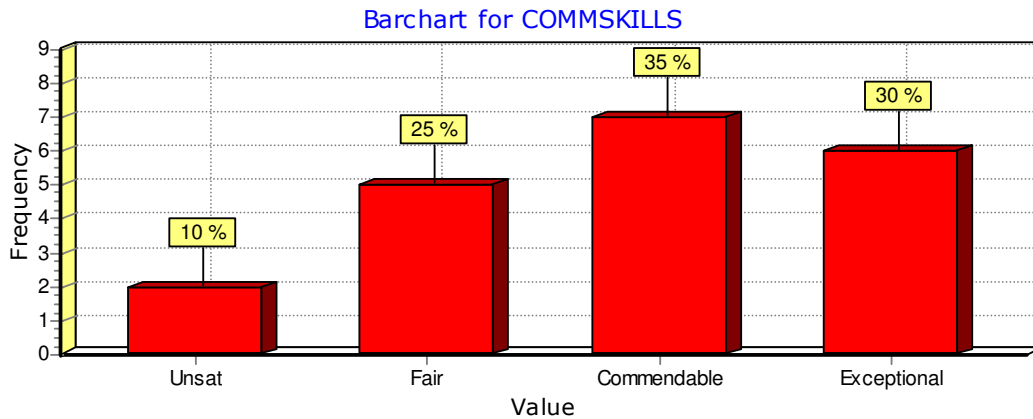


Figure 49: Demonstrates effective verbal communication skills

Frequency table 75 and figure 49 indicate that 10% of the supervising Biokineticists who completed the survey reported that the intern, “demonstrates effective verbal communication skills,” was unsatisfactory, 25% thought it fair, 35% thought it commendable and 30% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “demonstrate effective verbal communication skills,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.703$ ($df=3$, $\chi^2=1.41$) which implies that there is no statistically significant difference.

- **Creative thinking and problem solving skills**

Frequency table 76: Breaks down complex tasks/problems into manageable components

Value	N	%	Cumulative %
Unsatisfactory	4	20.00	20.00
Fair	4	20.00	40.00
Commendable	10	50.00	90.00
Exceptional	2	10.00	100.00
Total	20	100.00	

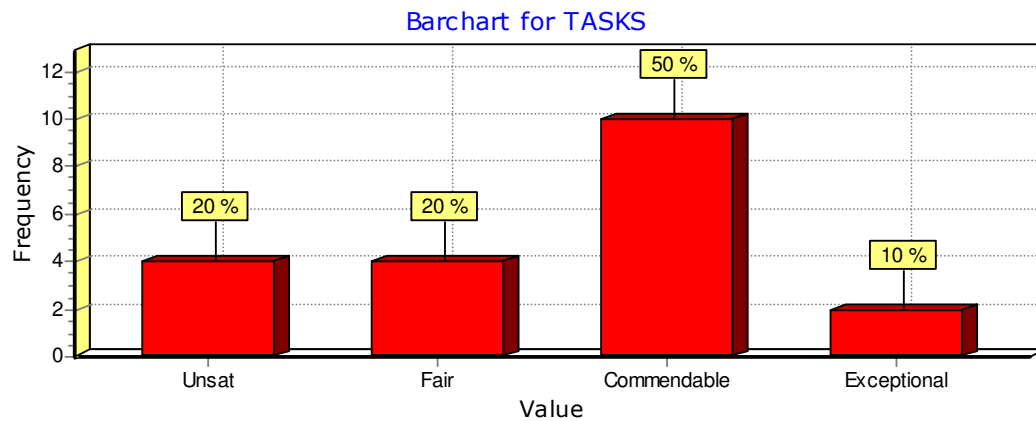


Figure 50: Breaks down complex tasks/problems into manageable components

Frequency table 76 and figure 50 indicate that 20% of the supervising Biokineticists who completed the survey reported that the intern, “breaks down complex tasks/problems into manageable components,” was unsatisfactory, 20% thought it fair, 50% thought it commendable and 10% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “break down complex tasks/problems into manageable components,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.741$ ($df=3$, $\chi^2=1.25$) which implies that there is no statistically significant difference.

Frequency table 77: Is able to brainstorm/develop options and ideas

Value	N	%	Cumulative %
Unsatisfactory	4	20.00	20.00
Fair	6	30.00	50.00
Commendable	8	40.00	90.00
Exceptional	2	10.00	100.00
Total	20	100.00	

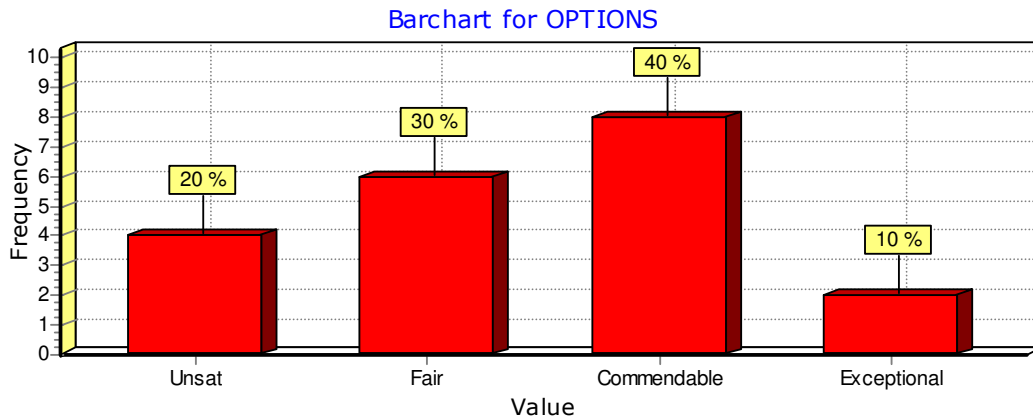


Figure51: Is able to brainstorm/develop options and ideas

Frequency table 77 and figure 51 indicate that 20% of the supervising Biokineticists who completed the survey reported that the intern, “is able to brainstorm/develop options and ideas,” was unsatisfactory, 30% thought it fair, 40% thought it commendable and 10% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “be able to brainstorm/develop options and ideas,” “marked effects are significant if $p \leq 0.0500$. In this case $p = 0.115$ ($df=3$, $\chi^2=5.94$) which implies that there is no statistically significant difference.

Frequency table 78: Demonstrates good analytical capacity

Value	N	%	Cumulative %
Unsatisfactory	3	15.00	15.00
Fair	6	30.00	45.00
Commendable	9	45.00	90.00
Exceptional	2	10.00	100.00
Total	20	100.00	

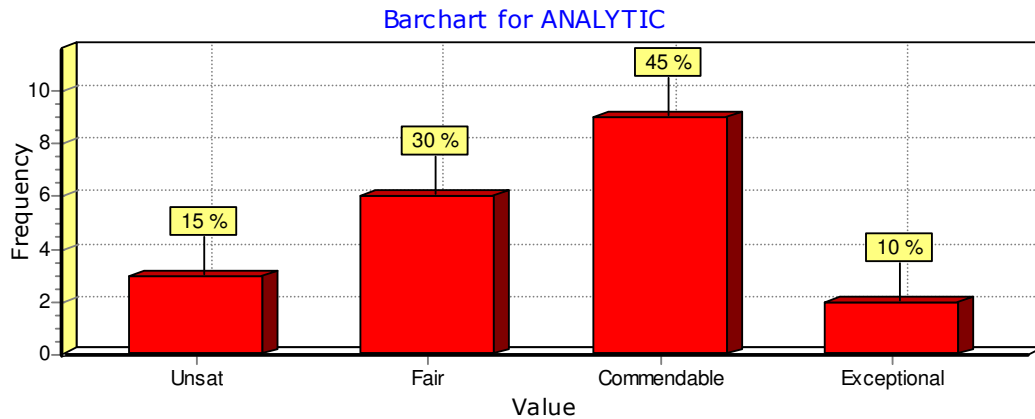


Figure 52: Demonstrates good analytical capacity

Frequency table 78 and figure 52 indicate that 20% of the supervising Biokineticists who completed the survey reported that the interns, “demonstrate good analytical capacity,” was unsatisfactory, 30% thought it fair, 45% thought it commendable and 10% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “demonstrate good analytical capacity,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.376$ ($df=3$, $\chi^2=3.10$) which implies that there is no statistically significant difference.

- **Professional and career development skills**

Frequency table 79: Exhibits a self-motivated approach to work

Value	N	%	Cumulative %
Unsatisfactory	3	15.00	15.00
Fair	6	30.00	45.00
Commendable	11	55.00	100.00
Total	20	100.00	

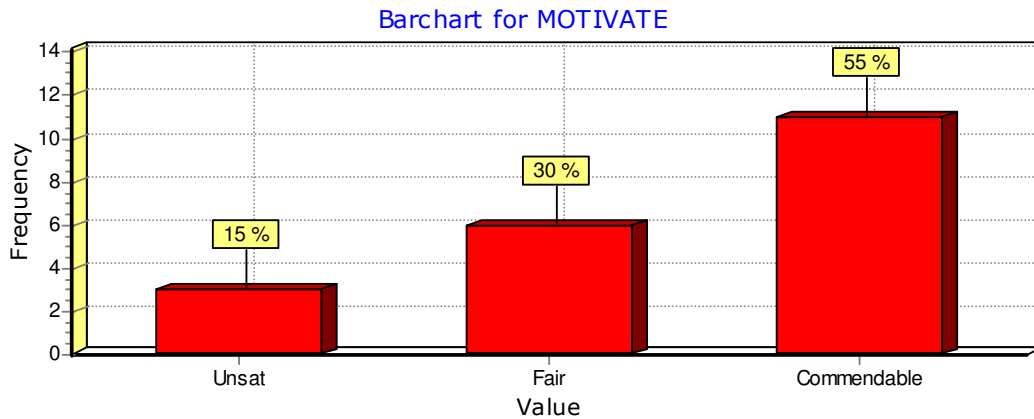


Figure 53: Exhibits a self-motivated approach to work

Frequency table 79 and figure 53 indicate that 15% of the supervising Biokineticists who completed the survey reported that the interns, “exhibit a self-motivated approach to work,” was unsatisfactory, 30% thought it fair, 55% thought it commendable. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “exhibit a self-motivated approach to work,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.588$ ($df=2$, $\chi^2=1.06$) which implies that there is no statistically significant difference.

Frequency table 80: Demonstrates the ability to set appropriate priorities/goals

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	4	20.00	30.00
Commendable	10	50.00	80.00
Exceptional	4	20.00	100.00
Total	20	100.00	

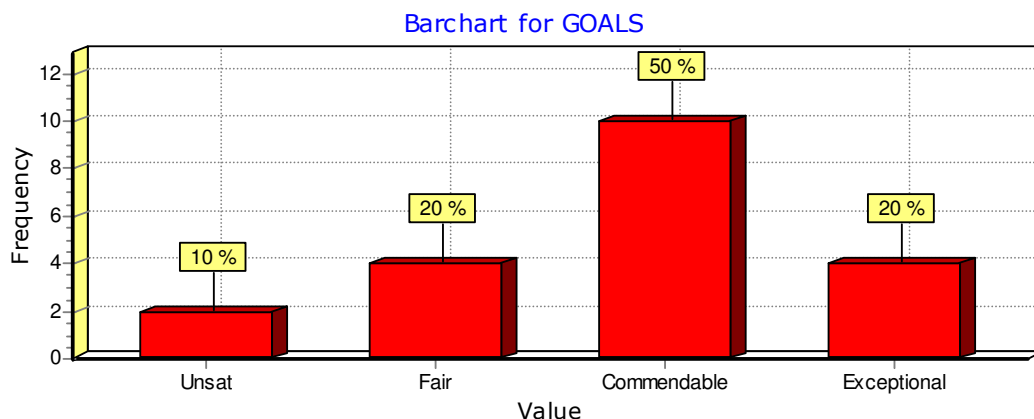


Figure 54: Demonstrates the ability to set appropriate priorities/goals

Frequency table 80 and figure 54 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns, “demonstrate the ability to set appropriate priorities/goals,” was unsatisfactory, 20% thought it fair, 50% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “demonstrate the ability to set appropriate priorities/goals,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.266$ ($df=3$, $\chi^2=3.96$) which implies that there is no statistically significant difference.

Frequency table 81: Exhibits professional behaviour and attitude

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	2	10.00	20.00
Commendable	12	60.00	80.00
Exceptional	4	20.00	100.00
Total	20	100.00	

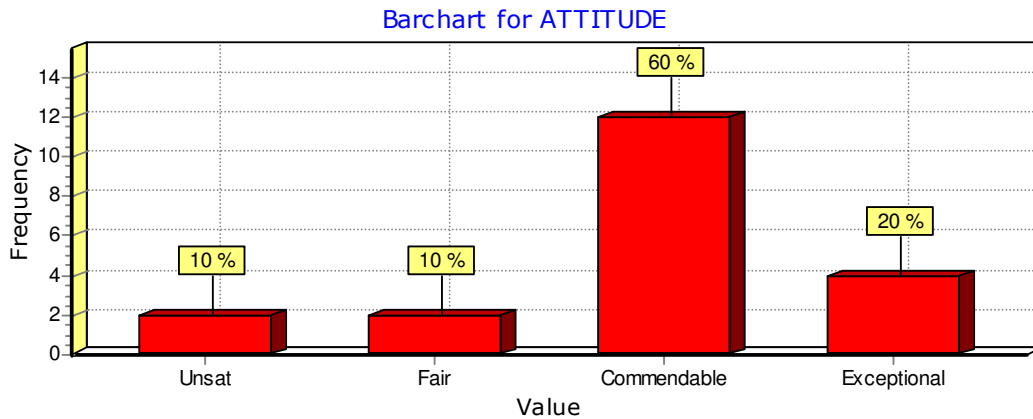


Figure 55: Exhibits professional behaviour and attitude

Frequency table 81 and figure 55 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns, “exhibit professional behaviour and attitude,” was unsatisfactory, 10% thought it fair, 60% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “exhibit professional behaviour and attitude,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.514$ ($df=3$, $\chi^2=2.29$) which implies that there is no statistically significant difference.

- **Interpersonal and teamwork skills**

Frequency table 82: Manages and resolves conflict in an effective manner

Value	N	%	Cumulative %
Unsatisfactory	3	15.00	15.00
Fair	8	40.00	55.00
Commendable	9	45.00	100.00
Total	20	100.00	

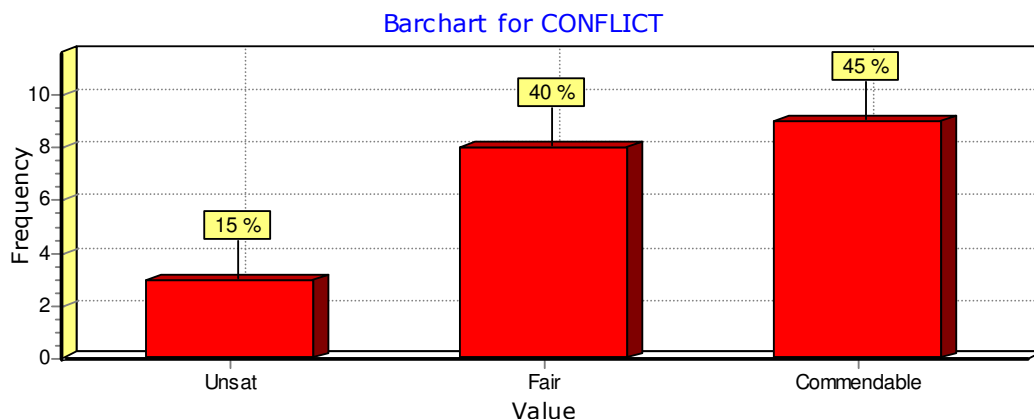


Figure 55: Manages and resolves conflict in an effective manner

Frequency table 82 and figure 56 indicate that 15% of the supervising Biokineticists who completed the survey reported that the interns, “manage and resolves conflict in an effective manner,” was unsatisfactory, 40% thought it fair, 45% thought it commendable . A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “manage and resolves conflict in an effective manner,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.719$ ($df=2$, chi-square=0.15) which implies that there is no statistically significant difference.

Frequency table 83: Supports and contributes to a teamwork ethic

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	7	35.00	45.00
Commendable	7	35.00	80.00
Exceptional	4	20.00	100.00
Total	20	100.00	

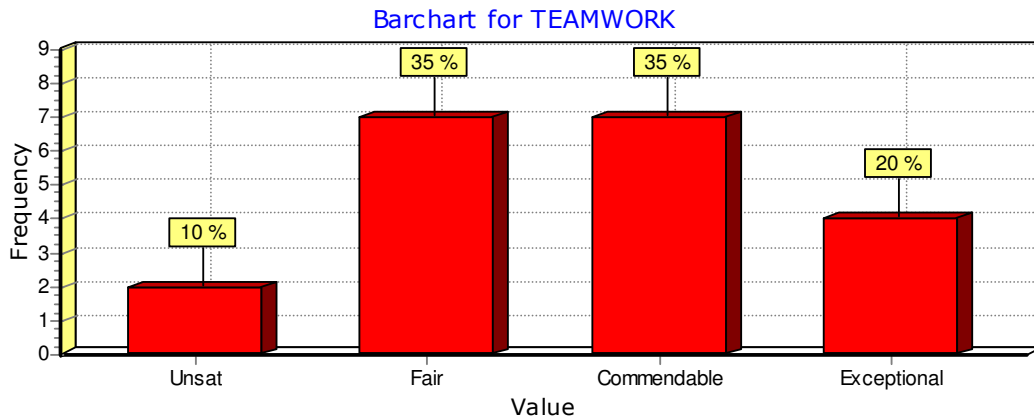


Figure 57: Supports and contributes to a teamwork ethic

Frequency table 83 and figure 57 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns, “supports and contributes to a teamwork ethic,” was unsatisfactory, 35% thought it fair, 35% thought it commendable and 20% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “supports and contributes to a teamwork ethic,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.971$ ($df=3$, $\chi^2=6.31$) which implies that there is no statistically significant difference.

Frequency table 84: Demonstrates assertive yet appropriate behaviour

Value	N	%	Cumulative %
Fair	6	30.00	30.00
Commendable	9	45.00	75.00
Exceptional	5	25.00	75.00
Total	20	100.00	

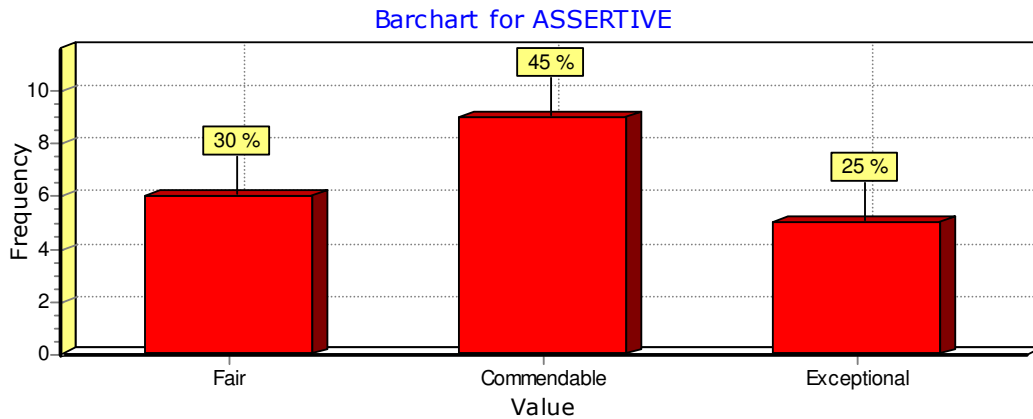


Figure 58: Demonstrates assertive yet appropriate behaviour

Frequency table 84 and figure 58 indicate that 30% of the supervising Biokineticists who completed the survey reported that the interns, “demonstrates assertive yet appropriate behaviour,” was unsatisfactory, 45% thought it commendable and 25% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to be able to, “supports and contributes to a teamwork ethic,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.812$ ($df=2$, $\chi^2=0.42$) which implies that there is no statistically significant difference.

- **Organisation/practice effectiveness skills**

Frequency table 85: Seeks to understand and support the organisation/practices’ mission/goals

Value	N	%	Cumulative %
Unsatisfactory	3	15.00	15.00
Fair	7	35.00	50.00
Commendable	10	50.00	100.00
Total	20	100.00	

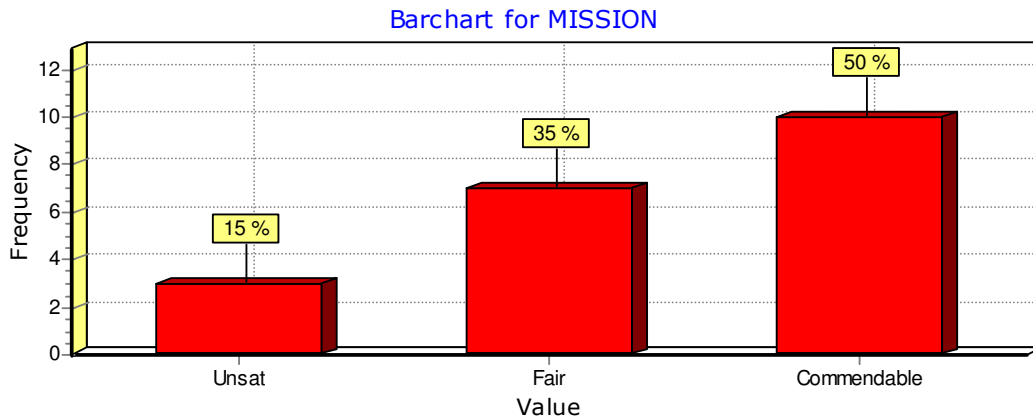


Figure 59: Seeks to understand and support the organisation/practices' mission/goals

Frequency table 85 and figure 59 indicate that 15% of the supervising Biokineticists who completed the survey reported that the interns, “seeks to understand and support the organisation/practices’ mission/goals,” was unsatisfactory, 35% thought it fair and 50% thought it commendable. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “understand and support the organisation/practices’ mission/goals, “marked effects are significant if $p \leq 0.0500$. In this case $p = 0.240$ ($df=2$, $chi\text{-square}=2.86$) which implies that there is no statistically significant difference.

Frequency table 86: Fits in with the norms and expectations of the organisation/practice

Value	N	%	Cumulative %
Unsatisfactory	5	25.00	25.00
Commendable	10	50.00	75.00
Exceptional	5	25.00	100.00
Total	20	100.00	

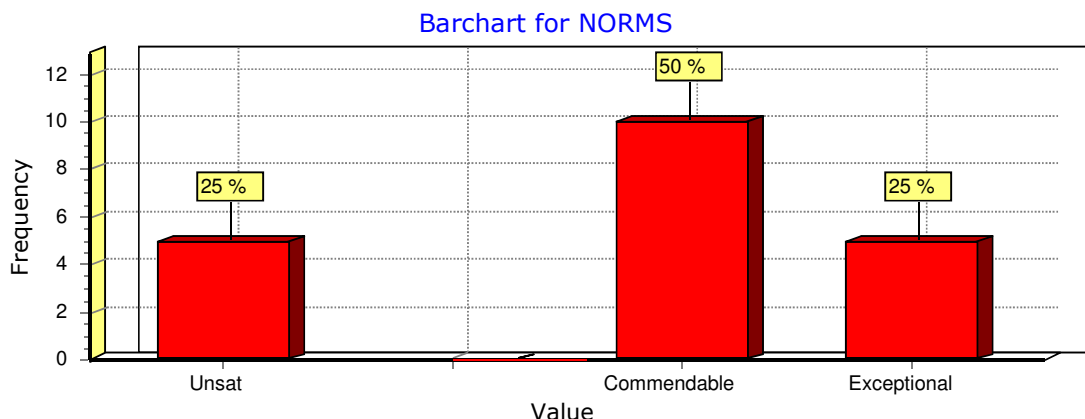


Figure 60: Fits in with the norms and expectations of the organisation/practice

Frequency table 86 and figure 60 indicate that 25% of the supervising Biokineticists who completed the survey reported that the interns, “fits in with the norms and expectations of the organisation/practice,” was unsatisfactory, 50% thought commendable and 25% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “fit in with the norms and expectations of the organisation/practice,” marked effects are significant if p is ≤ 0.0500 . In this case $p = 0.082$ ($df=2$, $\chi^2=5.00$) which implies that there is no statistically significant difference.

Frequency table 87: Works within appropriate authority and decision making channels

Value	N	%	Cumulative %
Unsatisfactory	5	25.00	25.00
Commendable	15	75.00	100.00
Total	20	100.00	

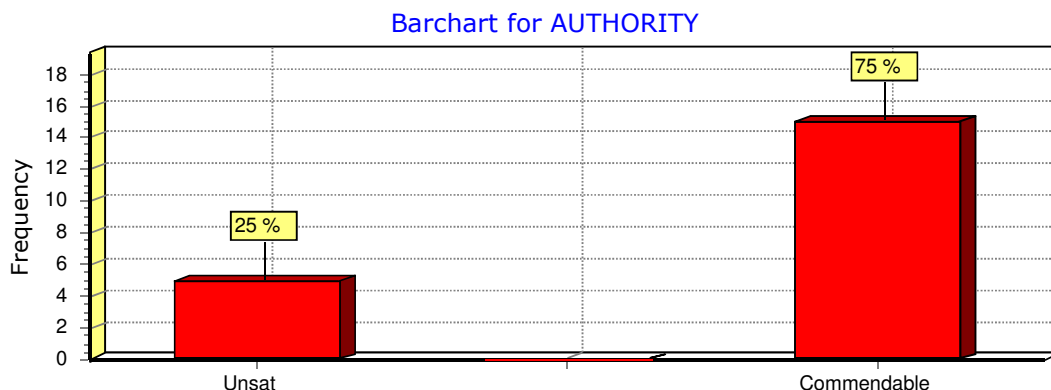


Figure 61: Works within appropriate authority and decision making channels

Frequency table 87 and figure 61 indicate that 25% of the supervising Biokineticists who completed the survey reported that the interns, “works within appropriate authority and decision making channels,” was unsatisfactory, 75% thought commendable. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “work within appropriate authority and decision making channels,” marked effects are significant if p is ≤ 0.0500 . In this case $p = 0.292$ ($df=2$, chi-square=1.11) which implies that there is no statistically significant difference.

- **Basic work habits**

Frequency table 88: Reports to work on time

Value	N	%	Cumulative %
Fair	6	30.00	30.00
Commendable	8	40.00	70.00
Exceptional	6	30.00	100.00
Total	20	100.00	

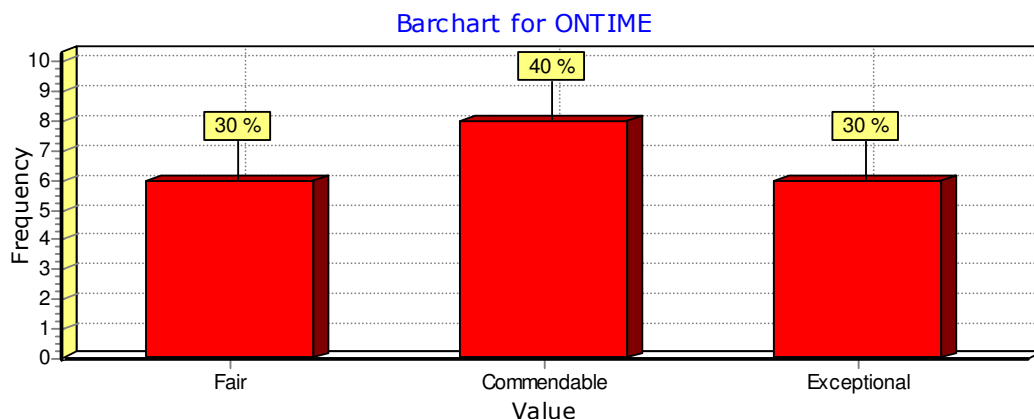


Figure 62: Reports to work on time

Frequency table 88 and figure 62 indicate that 30% of the supervising Biokineticists who completed the survey reported that the interns, “report to work on time,” was fair, 40% thought commendable and 30% exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “report to work on time,” marked effects are significant if $p \leq 0.0500$. In this case $p = 757$ ($df=2$, $\chi^2=0.56$) which implies that there is no statistically significant difference.

Frequency table 89: Exhibits a positive attitude

Value	N	%	Cumulative %
Unsatisfactory	2	10.00	10.00
Fair	5	25.00	35.00
Commendable	5	25.00	60.00
Exceptional	8	40.00	100.00
Total	20	100.00	

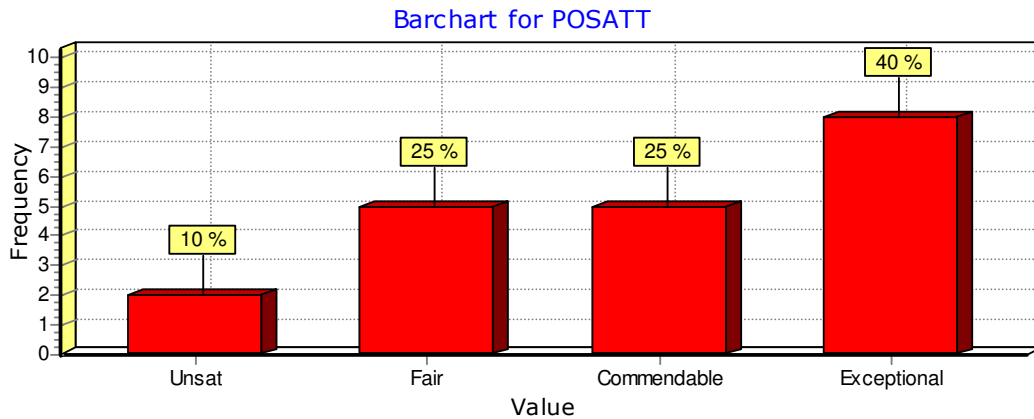


Figure 63: Exhibits a positive attitude

Frequency table 89 and figure 63 indicate that 10% of the supervising Biokineticists who completed the survey reported that the interns, “exhibit a positive attitude,” was unsatisfactory, 25% thought it fair, 25% thought it commendable and 40% thought it exceptional.. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “exhibit a positive attitude,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.278$ ($df=3$, $\chi^2=3.85$) which implies that there is no statistically significant difference.

Frequency table 90: Dress and appearance are appropriate for the organisation/practice

Value	N	%	Cumulative %
Fair	3	15.00	15.00
Commendable	8	40.00	55.00
Exceptional	9	45.00	100.00
Total	20	100.00	

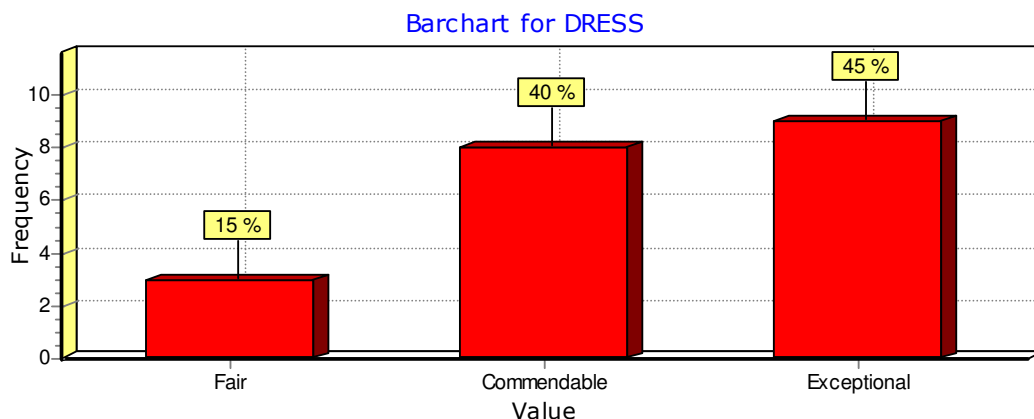


Figure 64: Dress and appearance are appropriate for the organisation/practice

Frequency table 90 and figure 64 indicate that 15% of the supervising Biokineticists who completed the survey reported that the interns, “dress and appearance are appropriate for the organisation/practice,” was fair, 40% thought it commendable and 45% thought it exceptional.. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “dress and appearance are appropriate for the organisation/practice,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.231$ ($df=2$, $\chi^2=2.93$) which implies that there is no statistically significant difference.

- **Perceived character (personality) attributes**

Frequency table 91: Displays a sense of integrity

Value	N	%	Cumulative %
Fair	6	30.00	30.00
Commendable	9	45.00	75.00
Exceptional	5	25.00	100.00
Total	20	100.00	

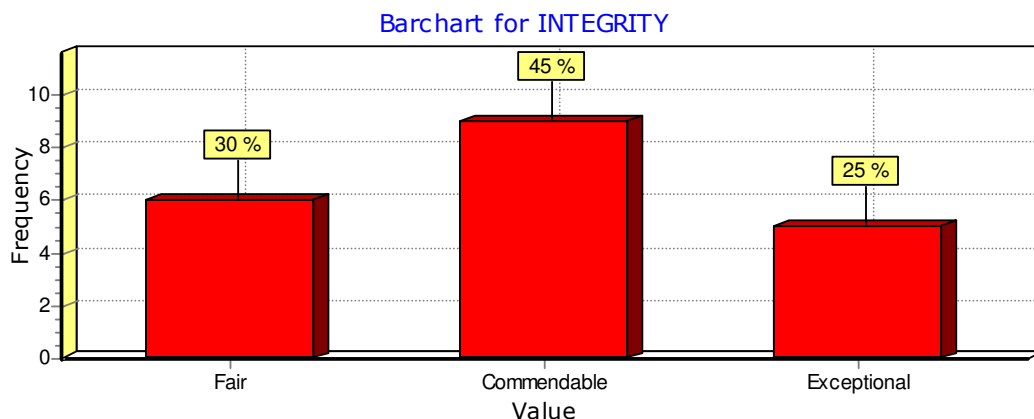


Figure 65: Displays a sense of integrity

Frequency table 91 and figure 65 indicate that 30% of the supervising Biokineticists who completed the survey reported that the interns, “display a sense of integrity,” was fair, 45% thought it commendable and 25% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “display a sense of integrity,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.574$ ($df=2$, $\chi^2=1.11$) which implies that there is no statistically significant difference.

Frequency table 92: Understands ethical values and behaves in an ethical manner

Value	N	%	Cumulative %
Fair	4	20.00	20.00
Commendable	10	50.00	70.00
Exceptional	6	30.00	100.00
Total	20	100.00	

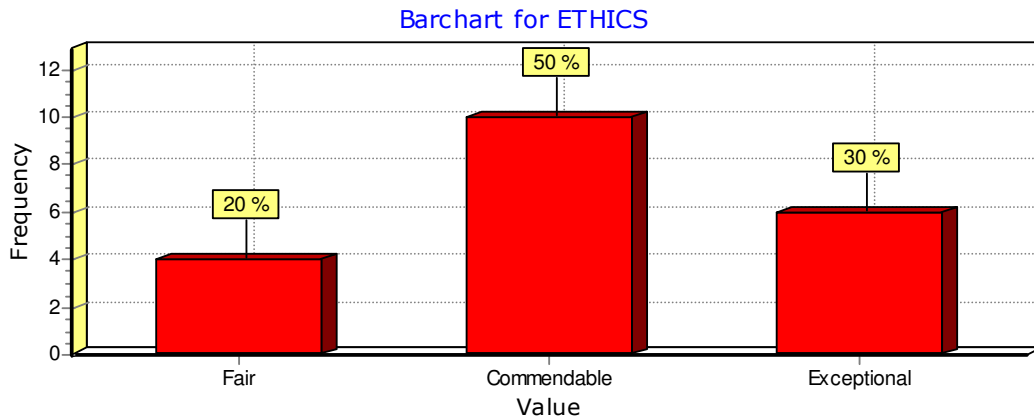


Figure 66: Understands ethical values and behaves in an ethical manner

Frequency table 92 and figure 66 indicate that 20% of the supervising Biokineticists who completed the survey reported that the interns, “understands ethical values and behaves in an ethical manner,” was fair, 50% thought it commendable and 30% thought it exceptional. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “understands ethical values and behaves in an ethical manner,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.164$ ($df=2$, $\chi^2=3.61$) which implies that there is no statistically significant difference.

Frequency table 93: Respects the diversity of co-workers

Value	N	%	Cumulative %
Fair	5	25.00	25.00
Commendable	15	75.00	100.00
Total	20	100.00	

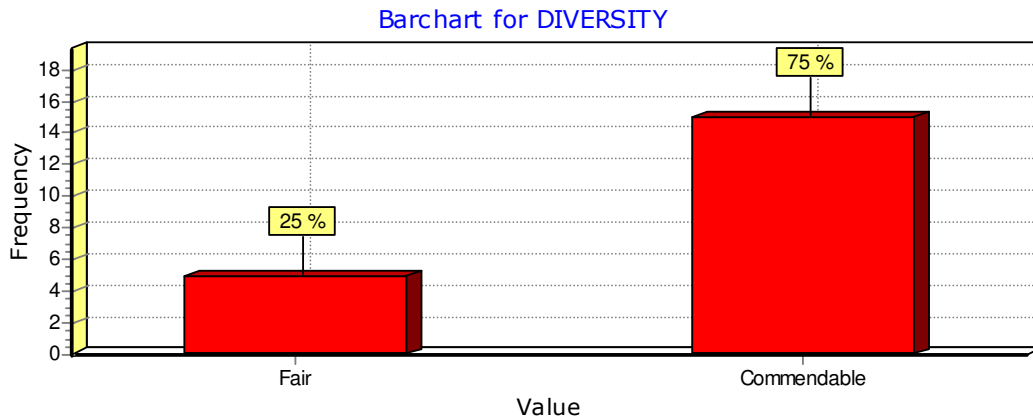


Figure 67: Respects the diversity of co-workers

Frequency table 93 and figure 67 indicate that 25% of the supervising Biokineticists who completed the survey reported that the interns, “respect the diversity of co-workers,” was fair and 75% thought it commendable. A chi-square test was used to see if there is a significant difference between the male and female supervising Biokineticists in terms of their reporting on interns’ ability to, “respects the diversity of co-workers,” marked effects are significant if p is ≤ 0.0500 . In this case $p = 0.292$ ($df=1$, $\chi^2=1.11$) which implies that there is no statistically significant difference.

4.6.3 Adequate training of interns

The following results are presented in tabular format (frequency tables) with “Yes” and “No” categorical variables.

Frequency table 94: On entering his/her internship year, do you feel the intern was adequately equipped/trained to evaluate the following patients

Value	N	%	Cumulative %
Healthy individuals			
Yes	17	85.00	85.00
No	3	15.00	100.00
Total	20	100.00	
Cardiovascular/pulmonary			
Yes	12	60.00	60.00
No	8	40.00	100.00
Total	20	100.00	
Metabolic			
Yes	14	70.00	70.00
No	6	30.00	100.00
Total	20	100.00	
Orthopaedic			
Yes	14	70.00	70.00
No	6	30.00	100.00
Total	20	100.00	

Frequency table 94 indicates that 85% of supervising Biokineticists who responded to the survey reported that the intern was “adequately equipped/trained to evaluate,” healthy individuals and 15% reported that they were not. Sixty percent (60%) of the supervising Biokineticists reported that interns were “adequately equipped/trained to evaluate,” cardiovascular/pulmonary patients while 40% reported that they were not. Seventy percent (70%) of supervising Biokineticists reported that the intern was “adequately equipped/trained to evaluate,” metabolic patients while 30% reported that they were not. Finally, 70% of the supervising Biokineticists who participated in the research reported that the intern was “adequately equipped/trained to evaluate,” orthopaedic patients while 30% reported that they were not.

Frequency table 95: On entering his/her internship year, do you feel the intern was adequately equipped/trained to prescribe final phase rehabilitation programmes to the following patients

Value	N	%	Cumulative %
Healthy individuals			
Yes	18	90.00	90.00
No	2	10.00	100.00
Total	20	100.00	
Cardiovascular/pulmonary			
Yes	12	60.00	60.00
No	8	40.00	100.00
Total	20	100.00	
Metabolic			
Yes	12	60.00	60.00
No	8	40.00	100.00
Total	20	100.00	
Orthopaedic			
Yes	16	65.00	35.00
No	7	35.00	100.00
Total	20	100.00	
Disabled			
Yes	11	55.00	55.00
No	9	45.00	100.00
Total	20	100.00	

Frequency table 95 indicates that 90% of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped/trained to prescribe final phase rehabilitation programmes,” for healthy individuals 10% reported that they were not. Sixty percent (60%) of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped/trained to prescribe final phase rehabilitation programmes,” for healthy individuals 40% reported that they were not. Sixty percent (60%) of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped/trained to prescribe final phase rehabilitation programmes,” for metabolic patients 40% reported that they were not. Sixty five percent (65%) of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped/trained to prescribe final phase rehabilitation programmes,” for orthopaedic patients 35% reported that they were not. Fifty five percent (50%) of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped/trained to prescribe final phase rehabilitation programmes,” for disabled patients 45% reported that they were not.

Frequency table 96: On entering his/her internship year, do you feel the intern was adequately equipped trained to write patient feedback reports

Value	N	%	Cumulative %
Yes	15	75.00	75.00
No	5	25.00	100.00
Total	20	100.00	

Frequency table 96 indicates that 75% of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped to write patient feedback reports,” 25% reported they did not.

Frequency table 97: On entering his/her internship year, do you feel the intern was adequately equipped trained to use ICD 10 codes for invoicing purposes

Value	N	%	Cumulative %
Yes	9	45.00	45.00
No	11	55.00	100.00
Total	20	100.00	

Frequency table 97 indicates that 45% of the supervising Biokineticists who took part in the research reported that the intern was “adequately equipped to use ICD codes for invoicing purposes,” 55% reported they did not.

Frequency table 98: Did the intern complete the HPCSA guideline number of evaluations in their internship?

Value	N	%	Cumulative %
Yes	18	90.00	90.00
No	2	10.00	100.00
Total	20	100.00	

Frequency table 98 indicates that 90% of the supervising Biokineticists who took part in the research reported that the intern did, “complete the HPCSA guideline number of evaluations in their internship,” 10% reported that they did not.

4.7 Results for study propositions

These results are present as frequency tables, figures, cross-tabulation tables and a chi-square test results which is used to see if there is a significant difference between genders and the proposition variables (marked effects are significant if $p \leq 0.0500$).

Frequency table 99: Proposition: Biokineticists are satisfied with their course experience during their Honours year

Value	N	%	Cumulative %
Yes	40	85.11	85.11
No	7	14.89	100.00
Total	47	100.00	

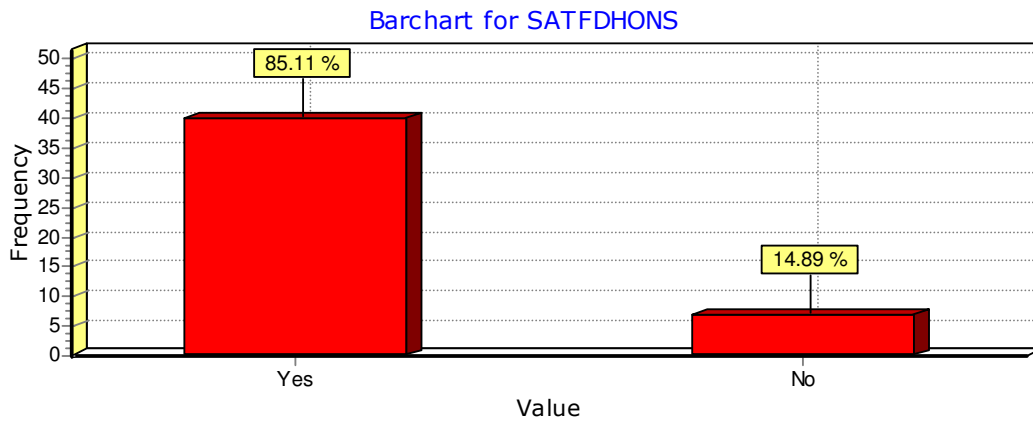


Figure 68: Proposition: Biokineticists are satisfied with their course experience during their Honours year

Frequency table 99 and figure 68 indicate that 85.11% of Biokineticists are satisfied with their course experience during their Honours year and 14.89% are not.

Cross- tabulation table 1: Proposition -Male and female Biokineticists are equally satisfied with their course experience during their Honours year

Value	Female	Male	Cumulative %
Yes	28	12	40.00
No	6	1	7.00
Total	34	13	47.00

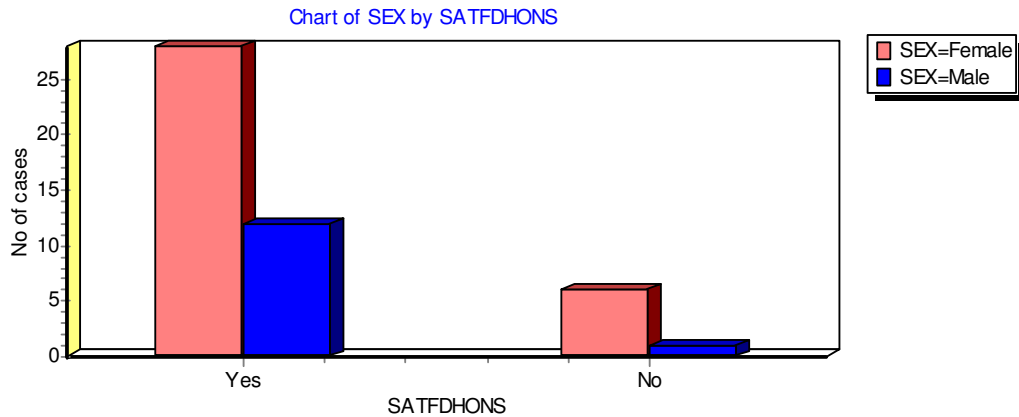


Figure 69: Proposition - Male and female Biokineticists are equally satisfied with their course experience during their Honours year

Cross tabulation table 1 and figure 69 indicate that 40% of male and female Biokineticists are equally satisfied with their course experience during their Honours year and 7% are not. A chi-square test was used to see if there is a significant difference between the male and female Biokineticists in terms of if they were “equally satisfied with their course experience during their internship year,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.391$ ($df=1$, $\chi^2=0.74$) which implies that there is no statistically significant difference indicating that male and female Biokineticists are equally satisfied with their course experience during their Honours year.

Frequency table 100: Biokineticists are satisfied with their internship year experience

Value	N	%	Cumulative %
Yes	39	89.28	89.28
No	8	17.02	100.00
Total	20	100.00	

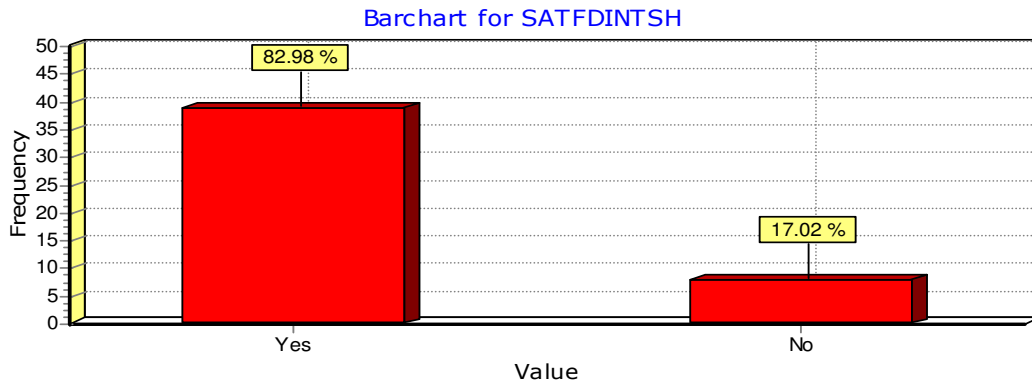


Figure 70: Biokineticists are satisfied with their internship year experience

Frequency table 100 and figure 40 indicate that 82.98% of interns are satisfied with their internship year experience and 17.02% are not.

Cross - tabulation table 2: Proposition - Male and female Biokinetic interns are equally satisfied with their internship year experience

Value	Female	Male	Cumulative %
Yes	27	12	39.00
No	7	1	8.00
Total	34	13	47.00

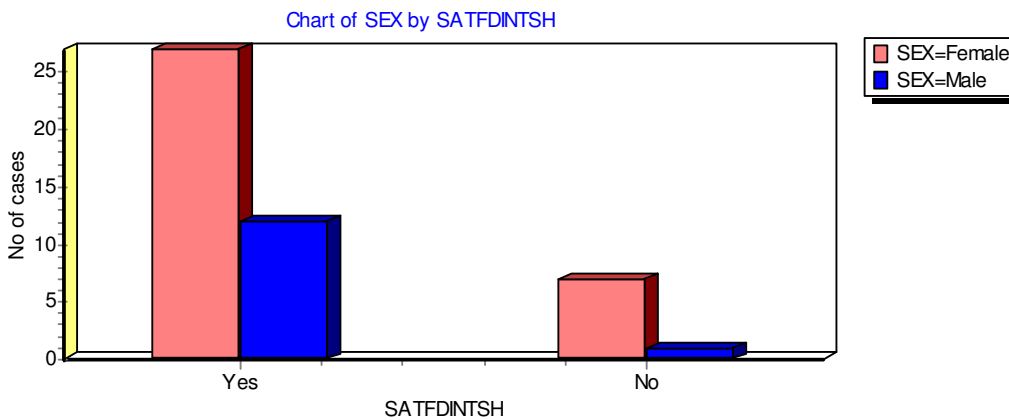


Figure 71: Proposition - Male and female Biokinetic interns are equally satisfied with their internship year experience

Cross tabulation table 2 and figure 71 indicate that 39% of male and female Biokineticists are, “equally satisfied with their internship year experience,” and 8% are not. A chi-square test was used to see if there is a significant difference between the male and female Biokineticists in terms of

if they were “equally satisfied with their internship year experience,” marked effects are significant if $p \leq 0.0500$. In this case $p = 0.293$ ($df=1$, $\chi^2=1.11$) which implies that there is no statistically significant difference between how male and female Biokineticists feel about their internship year.

Frequency table 101: Proposition - accredited supervising Biokineticists are generally satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year

Value	N	%	Cumulative %
Yes	20.00	100.00	100.00
Total	20.00		100.00

Frequency table 101 indicates that 100% of accredited supervising Biokineticists are generally satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year.

Proposition - accredited supervising male and female Biokineticists are generally satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year. As frequency table 101 indicates that 100% of accredited supervising Biokineticists are generally satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year there will be no difference between male and female accredited supervising Biokineticists in this regard.

4.8 Qualitative results

The following results are gleaned from a scrutiny of the qualitative data firstly, from the open-ended questions for Biokineticists evaluation of their internship followed by, supervising Biokinetics evaluation of interns. The open – ended questions were analysed using Thematic Content Analysis.

4.9 Open - ended questions (Biokineticists evaluation of their internship)

Section 5 is presented as themes which arose naturally out of the data (Terre Blanche et al., 2006). An example of five responses is given for each theme or sub-theme. A full transcript of responses can be found in appendix 5. Responses in the transcript are colour coded for ease of reference. The transcripts are presented as they were found in the questionnaires, although spelling errors and

grammar were corrected where necessary. Great care was taken not to alter meaning by correcting grammar.

4.9.1 Theme 1: Practicals

Biokineticists felt that practicals were both a positive and negative experience in both their Biokinetics Honours course and their internship year. The theme is thus broken into the sub-themes Practicals (positive) and Practicals (negative). The questionnaires were arbitrarily labelled 1 to 47; this number was allocated to each respondent.

- **Sub – Theme 1.1: Practicals (positive)**

The following responses indicate that some of the sample respondents experienced practicals in a positive manner during their Honours and internship years. Respondents noted that practice rotation was a plus as was clinical decision making and working in the field of sports injuries.

Respondent 1: “Working with sporting teams and sports injuries. Rotating through different practices and working with new equipment and patients as well as giving classes (aerobics, Pilates).”

Respondent 4: “The best strength for me was working with different types of patients like older patients, disabled patients and those with problem hips.”

Respondent 5: “The practical application and clinical decision making, this was a breath of fresh air after three years of arbitrary theoretical work.”

Respondent 19: “To apply theory into practical understanding and learning.”

Respondent 13: “With practical work – you learn.”

Respondent 35: “Real world learning.”

- **Sub - Theme 1.2: Practicals (negative)**

The following responses underpin the sub-theme Practical’s (negative) where lack of practicals or the need for more practicals was experienced as a negative by other respondents. Some members of

the study sample felt that more practical application was required, as was more hands on patient experience during Biokinetic Honours year and more practical evaluations during internship.

Respondent 6: “I would like to do more practical work with patients during my studies not just my internship.”

Respondent 25: “A lot more practical application is required as I did not do all the evaluations in the internship year.”

Respondent 29: “Practical hours (need more).”

Respondent 41: “Need more hands on patient experience.” [Honours year]

Respondent 44: “Practical application during Honours into practice [internship] didn’t flow.”

4.9.2 Theme 2: Research

Respondents felt that research, which is a required module in Biokinetic Honours, was a positive during their Biokinetics Honours years as it taught them a lot. The following responses support the theme.

Respondent 2: “Learning research techniques was great.”

Respondent 9: “The research project when we looked at a topic we were interested in...”

Respondent 13: “Statistics and research courses within the Honours programme.”

Respondent 39: “.....and the research article we had to complete as we learnt a lot through research.”

Respondent 43: “Research studies, this helped our understanding a lot...”

4.9.3 Theme 3: Knowledge

The theme Knowledge, encompasses understanding, information and education, it was noted in both a positive and negative manner by respondents reporting on both Biokinetic Honours and internships, thus the thematic category is broken down into three sub themes, Knowledge (positive),

Knowledge (negative) and Learning this, because learning and knowledge are integrally related. In the sub-theme knowledge (positive) respondents felt they had access to for instance, a good theoretical base and were introduced to a wide spectrum of knowledge. In the sub-theme knowledge (negative) respondents felt that, lecturing staff had little experience teaching and there was too much knowledge to cover in one year. In the sub-theme learning respondents reported the ability to learn new skills and multi-tasking amongst other things. They also reported learning in terms of practical and personal experience. The following responses underpin these sub-themes.

- **Sub – theme 3.1: Knowledge (positive)**

Respondent 2: “Theory was good so was knowledge gained...”

Respondent 10: I managed to work with a wide population and learned what I needed to know for the future.

Respondent 22: “Good standards of education and knowledge supplied.”

Respondent 40: “Wide spectrum of new knowledge...”

Respondent 45: “..... and the knowledge we gained from our lecturers.”

- **Sub – theme 3.2: Knowledge (negative)**

Respondent 3: “Lecturing staff had little experience of teaching so we didn’t get that much knowledge.”

Respondent 8: “More input by the supervisor as I didn’t think I gained enough knowledge in my internship year [internship year].”

Respondent 9: “Poor lecturing and lecture delivery we had to get knowledge from books which were difficult.”

Respondent 13: “More time for all information and knowledge, one year is too short.”[Honours year]

Respondent 45: “.....there was too much knowledge to cover in one year.”

- **Sub – theme 3.3 Learning**

Respondent 28: “The most challenging year ever, even now I find that many years later thinking about how the year not only improved my learning and thinking and how to challenge ideas but taught me strength of character.”

Respondent 32: “The ability to learn skills and practice my own.”

Respondent 33: “Further learning opportunities and great discussions.”

Respondent 36: “It taught me to multi-task a lot and I grew as a person. It gave me a chance to gain the practical experience that lacked from the Honours programme. I gained more confidence to work with my own patients as a qualified Biokineticist.”

Respondent 40: “Exposure too many new conditions; confidence in treating patients; learning and understanding practice management and keeping patient satisfaction high.”

4.9.4 Theme 4: Poor communication

Poor communication was noted as a problem by respondents during both Honours (between academics and students) and their internships (between supervising Biokineticists and interns) as indicated by the following responses.

Respondent 20: “Lecturers inability to talk to Honours students and the HOD of the department needs to be more “hands on.”

Respondent 24: “Better communication and course outlines from lecturers.”

Respondent 32: “The communication was very bad and if we asked about things like research we were told to read a textbook.”

Respondent 36: “The communication in the departments to students could have been a lot better, most of the time the class felt unsure about [how to do] tasks given.”

Respondent 22: “Better guidance and feedback as communication where I did my internship was very bad.”

4.9.5 Theme 5: Sink or Swim

Respondents indicated that they had to cope by themselves as they were not given enough support or guidance specifically in their internship year. The theme is supported by the following responses.

Respondent 4: “Biokineticists should spend more one-on-one time with their interns. Too many Bio’s just have interns to run their practices without teaching them anything.”

Respondent 25: “You just get thrown into the deep end, maybe more learning time with the bio and client.”

Respondent 30: “Provide more practical support in terms of mentorship. In my internship year the senior Bio left in June and we were expected to complete our internship without a senior Bio.”

Respondent 37: “Better supervision and teaching, not just an under-paid employee doing all that the qualified Bios were doing.”

Respondent 41: “Give interns more freedom with patients and provide feedback after for support. They just leave you to yourself.”

4.9.6 Theme 6: Working conditions

Many respondents felt that pay was poor, or could be better and working hours were long and could be managed better during their internship year as indicated by the following responses. Theme 6: Working conditions is thus broken down into two sub themes, Remuneration and Working hours.

- **Sub – theme 6.1: Remuneration**

Respondent 3: “.....The payment could be better but I suppose I was paid fairly in terms of the practice clientele numbers.”

Respondent 6: “....BASA and HPCSA must do something about the poor pay for us when we are interns.”

Respondent 8: “....Increase the remuneration as there is a lot of work.”

Respondent 10: “More pay.”

Respondent 46: "Increase remuneration – we received R2, 500 per month which is not near enough to cover rent, food and petrol. As a result I had to take on extra jobs to cover expenses in addition to completing my Masters."

- **Sub – theme 6.2: Working hours**

Respondent 1: "Working normal working hours not early in the morning and late at night (7.30am to 4.30pm)."

Respondent 6: "...BASA and HPCSA must do something about the poor pay for us when we are interns."

Respondent 36: "Fairer working hours and not seeing so many patients in a day."

Respondent 38: "Stricter working hours (not so long)."

Respondent 39: "Normal working hours, lunch breaks..."

4.9.7 Theme 7: Practice management

A recurrent theme was lack of practice management which includes the teaching of ICD 10 codes during Biokinetic Honours year, financial management and overall practice management, including ethical practice (related to billing and finances) during respondents Honours and internship years. The following responses support the inclusion of this theme.

Respondent 4: "Teach interns about running a practice for instance, tax."

Respondent 35: Ethics in Biokinetics, ICD 10 codes, tariff codes and real world situations.

Respondent 39: "...More lectures on practice management and ownership as well as information on medical aids, RX codes, ICD 10 codes, etc. Aspects pertaining to real life running of practices and the profession."

Respondent 46: "...Focus more on skills needed in working environment. We had no experience with ICD 10 codes."

Respondent 47: "Practice management and business skills."

4.9.8 Theme 8: Positive social interaction

Respondents noted teamwork and friendships, which are all part of social interaction, as a positive note during their training experience both as interns and students as indicated by the following responses.

Respondent 25: “Teamwork, great friends all in the same boat!”

Respondent 35: “Learning to work in a group was a good experience.”

Respondent 36: “I studied with a group of really interesting and good people who became friends.”

Respondent 39: “Good experience gained, good friendships built and networking for future support.”

Respondent 41: “.....Good friendships and teamwork.”

4.9.9 Theme 9: Mentorship

Some of the respondents noted that their supervising Biokineticists had been very professional, ethical and provided good mentorship during their internships. The following responses support this statement.

Respondent 3: “My employer was a good guide but gave me the space to think for myself. She was very ethical and a great example. She could think out of the box and encouraged me to do the same.”

Respondent 6: “The Bio I worked for! She was excellent and helped a lot.”

Respondent 12: “The Biokineticist exposed me to the work and still gave me guidance.

Respondent 18: “Good mentorship and given responsibility.”

Respondent 25: “A friendly environment and a good teacher.”

4.9.10 Theme 10: Improvements

The theme improvements is broken down into three sub-themes, Improvements Biokinetics Honours, Improvements Biokinetics Internships and Time-management (Biokinetic Honours and Internships). Four respondents (8.51%) noted that they would not make any improvements to programmes or that improvements had already been made (these comments can be found in appendix 5, respondents 12, 14, 15 and 17).

- **Sub- theme 10.1 Improvements Biokinetics Honours**

Respondents reported specific improvements they felt were needed to improve their learning experience in Biokinetics Honours.

Respondent 1: “Less focus on activities that are not relevant but are used to keep you busy. Cramming everything into 1 year, more practical work required.”

Respondent 2: “...First Aid hours, wasted time, we were far more people at the course than officials needed.”

Respondent 4: “More focus on anatomy and practice management is needed to be incorporated in the course.”

Respondent 5: “Emphasis on knowledge of appropriate exercise techniques particularly for individuals who are more theoretically inclined without broad experience in exercise and its application. That is some lecturers have not practiced and don’t seem to be very practical.”

Respondent 26: “Better pre-knowledge of anatomy and biomechanics when starting Honours. More Broader Balance training.”

- **Sub – theme 10.2: Improvements Biokinetics internships**

Respondents reported specific improvements they felt were needed to improve their learning experience in their Biokinetics internships.

Respondent 5: “I would improve it by having an external body designate internship positions for the intern instead of it being mostly application based. I think Community Services should be introduced, like for physiotherapists.”

Respondent 22: “Community service should be added to internships for the exposure to get you, as the therapist, and the general public more aware.”

Respondent 24: “Add community service after internship. The internship should be done through the public sector and not in private practice.”

Respondent 37: “A practical Board exam should be written at the end of the internship year.”

Respondent 46: “I feel a Board exam should be written at the end of the internship. I also think that the oral exam that we take at universities is equally important and this should be standardised.”

- **Sub – theme 10.3: Time-management (Biokinetic Honours and Internships)**

In sub-theme 10.3 respondents reported concerns with time management in both Biokinetics Honours and Internships which by inference needs improvement. The following responses underpin this sub – theme.

Respondent 12: “Learning to prioritize time around my studies and work.”

Respondent 14: “Better time management. I felt we were always pushed for time.”

Respondent 40: “Assignment instructions and guidance and teaching time-management.”

Respondent 45: “The timeframe was too short.”

Respondent 18: “Students not given enough time for all the work.”

4.9.11 Theme 11: Ad hoc

The theme ad hoc groups responses, which cannot be thematised or linked by category (mentoring or positive social interaction for example), as there are fewer than five responses in the group. They are thus coded under ad hoc as all responses have value to the evaluation process.

Respondent 9: “I hope this research aids in promoting Biokinetics in the public health sector. All the best.”

Respondent 17: “I was privileged to sit in Prof Gert Strydom’s (the “Father of Biokinetics”) class.”

Respondent 19: “BASA is doing a great job with marketing and assisting with Biokinetics and its practice.”

Respondent 33: “Everyone’s internship year is different due to different practice types therefore exposure to all categories (minimum standards) is not always available. Students that rotate need to learn how to be more involved and interactive playing “angry birds” on a cell phone doesn’t contribute to biomechanical postural analysis effectively!”

Respondent 40: “...The amount of internships available should be looked at as there are not enough available for the number of interns that there are.”

4.9.12 Theme 12: Length of internship

Respondents were asked if they felt that the internship programme was too long, long enough or too short and asked to explain their answers. The response rate to this question was 44.68% (21 responses). Sixteen (34.04% of the total sample) of these respondents answered that the internship year was long enough for a variety of reasons, five of which are given in sub-theme 12.1: A year is long enough. These responses are followed by sub – theme 12.2: A year is too short where 5 (10.63% of the final sample) respondents answered that a year was too short. One respondent answered that the Honours year was too short thus that response is noted under sub-theme 12.2.

- **Sub – theme 12.1: A year is long enough**

Respondent 31: “A year is long enough but after a year there should be a specialisation (if the person wants to).”

Respondent 33: “A year is long enough but I think the Honours course should be 2 years.”

Respondent 35: “A year is long enough provided the Bio has appropriate teaching methods and knowledge.”

Respondent 36: “A year is long enough however, it depends on the practice that you work in and on how much you are exposed to patients in your internship.”

Respondent 39: “A year is long enough. The workload would be too much to handle in a short period but also would be too much to cope with any longer than a year with regards to burnout.”

- **Sub - theme 12.2: A year is too short**

Respondent 1: “I felt that the Honours year should be more practical possibly extending the year slightly so it moves into internship.”

Respondent 20: “A year is too short. I think internships should be +/-18 months.”

Respondent 25: “Too short. University for bio was only 1 year which was more theory. Possibly more time for shadowing and practical learning.”

Respondent 43: “A year is too short because learning application of Honours work needs to be integrated earlier.”

Respondent 46: “A year is too short. Too much gets crammed into one year it feels rushed to learn the sheer volume of knowledge.”

4.9.13 Tabular summary of themes arising out of the open – ended questions

The following table is a summary of themes from the open-ended questions thus no verbatim responses from Biokineticists evaluating their Honours and internship year are recorded.

Table 2: Summary of main themes for open-ended questions

Themes	Sub-Themes
1. Practicals – This theme is divided into 2 sub-themes.	<p>1.1 Practical (positive) – practicals are a positive part of both Honours in Biokinetics and Biokinetics internships.</p> <p>1.2 Practical (negative) – lack of practicals during Honours Biokinetics.</p>
2. Research	<p>This is a required component of Biokinetics Honours. It is seen as a positive as respondents gained knowledge during Honours.</p>
3. Knowledge - The theme is broken down into 3 sub-themes.	<p>3.1 Knowledge (positive) – good theoretical aspects and a wide spectrum of knowledge.</p> <p>3.2 Knowledge (negative) – lecturers and supervisors have limited experience and poor knowledge transfer.</p> <p>3.3 Learning– promotion of learning as there was transfer of skills.</p>
4. Poor communication	<p>Poor communication between academics and students and supervising Biokineticists and intern Biokineticists.</p>

5. Sink or swim

6. Working conditions- The theme is broken down into 2 sub-themes.

7. Practice management

8. Positive social interaction

9. Mentorship

10. Improvements – this theme is split into 3 sub-themes.

11. Ad hoc

12. Length of internship - Responses are split into 2 sub-themes.

No support during internship year.

6.1 Remuneration– interns generally paid too little.

6.2 Working hours– generally too long for interns.

No practical elements of practice management taught during Honours

Biokinetics/internships.

Teamwork and good friendships during internships and Biokinetic Honours.

Relates to good guidance and good mentorship from supervisors during internships.

10.1 Improvements (Biokinetics Honours) – this sub- theme noted there should be less focus on irrelevant subject matter.

10.2 Improvements (Biokinetics internships) - the introduction of a Board exam and Community Service year.

10.3 Time-management– issues around too little time, particularly in Biokinetics Honours.

Responses that did not fit into a specific theme were noted here (elaborated under 4.9.11)

12.1 A year is long enough – the majority of respondents felt that a year is long enough.

12.1 A year is too short– Four respondents felt a year was too short.

4.10 Additional questions

Several ancillary or additional questions were asked to collect other relevant information. The results from these questions are reported below.

4.10.1 Practicing Biokineticist

The respondents were asked: are you currently practising as a Biokineticist? Yes, No – If no please explain why not? Four (8.51% of the final sample) responses were received from those individuals who were not practicing Biokinetics when the survey took place.

Respondent 24: “No - I was offered a job outside of Biokinetics but still with Health and Wellness that appealed to me. I found it incredibly difficult with medical aids and payment structures in the Bio practice.”

Respondent 28: “No – I work in the corporate sector as a product developer for Virgin Active – still using Biokinetics knowledge though.”

Respondent 30: “No, working as academic support staff at a university.”

Respondent 31: “No, I lecture and do research.”

4.10.2 Non-completion of required minimum number of guideline evaluations by intern Biokineticists

Biokineticists who evaluated their internships were asked if they completed the required minimum number of evaluations. The overall response rate to this question was 63.33%.

Table 3: Non-completion of minimum number of guideline evaluations by intern Biokineticists

Category	Total number of participants who did not complete evaluations	Overall % of sample who did not complete evaluations
Knee/thigh	2	4.25%
Foot/ankle	2	4.25%
Back	2	4.25%
Neck	4	8.51%
Arm/hand	9	19.14%
Orthopaedic (not specified)	2	4.25%
Cardiovascular/pulmonary	6	22.76%
Metabolic	7	14.89%
Disabled	9	19.14%

Table 3 indicates that 22.76% of the sample did not complete the required minimum guideline number of cardiovascular/pulmonary evaluations, 19.14% did not complete the required number in the category disabled and a further 19.14% in the arm/hand category, 14.89% did not complete the required minimum number of guideline evaluations in the metabolic category and 8.51% did not complete the required number in the neck category while 4.25% respectively did not complete the required number of guideline evaluations in the knee/thigh, foot/ankle, back and orthopaedic (not specified) category. Reasons given for not completing the guideline evaluations included (for a full transcript of responses see appendix 5).

Respondent 8: “No, all evaluations were not completed because no patients came in with knee/thigh foot/ankle and back injuries or only a limited number.”

Respondent 9: “Did not complete all evaluations because of the practice setting (in these categories: Disabled, orthopaedic generally neck and arm/hand).”

Respondent 14: “The practice I was at did not focus on those populations (in these categories: Metabolic and arm/hand).”

Respondent 18: “No, not enough patients in the disabled category.”

Respondent 22: “Did not have exposure to disabled and arm/hand clients.”

4.11 Open ended questions (Supervising Biokineticists evaluation of intern Biokineticists)

Only four (an overall 20% response rate) of the supervising Biokineticists answered the open ended questions on questionnaire 2. Essentially, this means that themes cannot be drawn from the existing data as it is too small. The surveys were numbered in an arbitrary manner thus respondents are given that arbitrary number and not identified (maintaining confidentiality). To ensure no confusion with the responses from Biokineticists evaluating their internship year an S will be placed before the word Respondent = S. Respondent 1, and so on. Two answers were received to the question (10% response rate): “Did the intern complete the HPCSA guideline number of evaluations in their internship – any comments related to this question.”

S.Respondent 7: “There should be more work on cardiovascular during the Honours year and more work on evaluations generally.”

S.Respondent 18: “No, they did not as the practice does not have the clientele for some of the categories. We signed off though as do most practices even though they might not admit to it.”

Two responses were received to the question: do you have any further comments (or suggestions)? A ten percent (10%) response rate was received to this question.

S.Respondent 4: The evaluation process of the interns should be more thoroughly defined. The universities should monitor the private practice internship process. They should receive progress reports on a quarterly basis and have access to a portfolio of evidence (from the practice). Evaluations should be performed quarterly. The evaluation forms should be more specific.

S. Respondent 18: The universities, BASA and the HPCSA do not monitor internships adequately. Interns are poorly paid by most practices and do not make a living wage they are also often left to their own devices. Much more effort should be made by BASA through the HPCSA to have internships of at least 6 months in the public sector followed by 6 months in private practices. A Community Service year should also be introduced to allow interns to experience different aspects of the community. Most Biokineticists and interns are predominately White – this should to change.

4.12 Focus group results

This section focuses on analysis of the data and results arising out of the focus group. The research is presented in the following order firstly, a description of the demographic information of participants followed by a tabular presentation of the same. This is followed by a presentation of themes arising from the data, then a tabular summary of themes and sub-themes. The focus group was conducted in English as the participants were all fluent in that language, although some were first language Afrikaans speakers. The focus group met one week after the first meeting for 15 minutes to verify the transcript. A few minor changes were made, at participants’ requests, to ensure the transcript was a true reflection of the statements given at the first meeting and gave a true, in-depth account of participants’ challenges and experiences during Biokinetics Honours and Biokinetics internships. It must be stated that the researcher’s subjective experience of two of the participants in the group was that they were inclined to be pessimistic, as opposed to optimistic, which may have coloured their views of their internships and to an extent their Honours year in a more negative fashion than other participants. The researcher thus had to re-focus group discussions on the questions when the two participants wanted to continue focusing on their negative

experiences. This was carried out to ensure that the group was not influenced by these participants and were able to iterate their own experiences both positive and negative. It is possible that these participants were not psychologically prepared for their internship year (Avraamides, 2008) and were thus more inclined to complain to both colleagues and friends (Chen et al., 2011) than their peers. However, by re-focusing the group, with the help of the co-facilitator (psychologist) the two participants were able to focus on some of the positives in their internship and Honours years.

4.12.1 Demographic information (focus group)

One focus group was conducted with Biokineticists who had completed their internship year. The participants had made it known they were available to take-part in the focus group when they answered the survey questionnaire. The participants in the study gave their own subjective experiences of their internship and Honours year experience. The majority of the focus group were practicing Biokineticists (4) and 2 were not. The two Biokineticists not practicing were working in health related fields and had kept up their registration. The participants were asked to draw a number from 1 – 6 out of a box, to ensure confidentiality they are identified by that number in the transcript. Each of the participants signed an informed consent agreement, as well as giving verbal agreement for taking part in the research. Participants were informed they could withdraw at any time and that they did not have to answer questions, or participate in any part of the discussion if it made them feel uncomfortable. They were told that if they felt they needed more than the session de-briefing (after the focus group discussion) a qualified professional had agreed to see them pro-bono if required. No participants required this intervention. Participants also gave consent to having the discussion audio-taped so the researcher could transcribe the notes later. However, the researcher did take field notes to supplement the audio recording.

Table 4: Demographic information (focus group)

Participant	1	2	3	4	5	6
Age	25 yrs.	27 yrs.	27 yrs.	29 yrs.	29 yrs.	29 yrs.
Gender	Male	Female	Female	Female	Female	Male
Race	White	White	White	White	White	White
Language	English	Afrikaans	Afrikaans	English	English	English
Year of internship	2012	2011	2010	2010	2010	2011
Undergrad degree	University of Johannesburg	University of Pretoria	University of Pretoria	Rhodes University	University of Johannesburg	University of Zululand
Biokinetics	University of	University	University of	University	University of	University

Honours	Johannesburg	of	Johannesburg	of	the	of
		Zululand		Zululand	Witwatersrand	Zululand
Province where internship completed	Gauteng	Gauteng	Mpumalanga	KwaZulu-Natal	Gauteng	Gauteng

Table 4 indicates that two of the participants were male and four female. Three of the participants were 29 years of age, two were 27 years of age and one was 25 years of age. The focus group was made up of all White participants, two of whom were Afrikaans first language speakers and four of whom were English first language speakers. Three of the participants finished their internship in 2010, two in 2011 and one finished in 2012. Two of the participants completed their undergraduate degree at the University of Johannesburg, two at the University of Pretoria, one at the University of Zululand and one Rhodes University. Two of the participants completed their Biokinetics Honours at the University of Johannesburg, one at the University of the Witwatersrand and three at the University of Zululand. Four of the participants completed their internships in Gauteng, one in KwaZulu-Natal and one in Mpumalanga.

4.12.2 Presentation of themes arising out of the focus group data

The analysis of data arising out of the focus group is presented in themes which emerged naturally out of the data using the process of Thematic Content Analysis (TCA). The themes arising out of this analysis are presented in no specific order with five statements from participants supporting a given theme or three responses each, if the theme is split into sub-themes (a full transcript of responses can be found in appendix 6). All the responses were presented verbatim. The researcher used natural pauses in speech to decide where punctuation should be used.

4.12.3 Focus group theme 1: Biokinetics future

The focus group participants felt that there was a niche market for the profession of Biokinetics in South Africa. They also stated that it is a profession only in South African however; Biokineticists can find work outside of the country, albeit that they must do different types of bridging courses. However, participants also stated that the field is not well known and marketed in the country. It was also indicated that a good living can be made in the field with the proviso that it depends on the area the practice is situated in and it can be a struggle over certain months of the year. The theme is

split into three sub-themes namely “Niche,” “Marketing,” and “Good living. “Participants noted that the profession was interesting and relevant. The theme is supported by the following responses.

- **Sub-theme 1.1: Niche**

Participant 1: “It is interesting and only a field in South Africa. I have had a look at options in Australia you have Exercise physiologists, so it’s sort of similar but you would have to write exams to get into it.”

Participant 6: “You can also become an exercise physiologist if you do the necessary conversion or Lab technician and work in England, one of my friends did that where you do ECG’s and things.”

Participant 4: “I Do. I think that there is a niche for our career. One of the Biokineticists that I worked with previously went to Australia. She did her 6 month internship in Australia and she worked for a top sports centre that side. I know that some that the Physiotherapists in Australia tend to cover Biokineticists in their scope and he was saying to her that when he was exposed to Biokinetics from a South African perspective and he was actually quite shocked at how much knowledge we had and what we can offer and he was like our field he wishes they could offer that there and I don’t think that Physiotherapist or hand on therapists can cover everything on their own.”

- **Sub-theme 1.2: Marketing**

Participant 5: “I don’t think that it is practical as it is now something needs to happen so Bios are better known and used by everyone. I think the profession needs better marketing.”

Participant 1: “...there is no work there [rural communities] people don’t know about Biokinetics.”

Participant 6:I would also like to say that the profession needs schools to promote it as most school kids have never heard of it.”

- **Sub-them 1.3: Good living**

Participant 1: “It’s good if you are in the right place not too close to a popular practice. Or you are in the popular practice or gym.”

Participant 2: “It is limited to your area because in Johannesburg you will earn a lot more than in Pretoria. As a qualified Biokineticist I was earning R4000 per month.

Participant 3: “That’s right – sometimes especially in December and January it can be a problem. [Probe: Why is that?] A lot of people go away, even doctors and clients take a break from their rehabilitation because of Christmas and that. In South Africa December is a break from everything.”

4.12.4 Focus group theme 2: Saturation

Participants felt there was the possibility that there could be too many interns and qualified Biokineticists entering the workplace which could result in market saturation. They also stated that there are too many practices too close to each other in urban areas, which may also lead to saturation. The following statements support this theme.

Participant 1: “There is bit I think that it is getting quite saturated. If you look in this area (Sandton) it’s ridiculous. I think BASA or the HPCSA need to enforce the rule of radius in terms of practice locations.”

Participant 2: “Not sure exactly what the distances are but if someone starts a practice it must not be within a certain radius but they are very close here in Joburg [Johannesburg] and new practices seem always to be starting or new Bios come into an existing practice and they need to get clients.”

Participant 4: “It is true that some of the best areas are quite saturated in Johannesburg and probably Cape Town.”

Participant 5: “I think that you have to work for yourself to make it work and it depends on your referral systems. If you have a lot of clients coming in its fine but it does just depend on the month. It’s one of those situations sometimes....but too many practices in an area doesn’t help.”

Participant 5: “I also think that saturation is a problem in itself. It because there aren’t a lot of new practices that are set up because there isn’t enough work and then there are too many people coming out of university.”

4.12.5 Focus group theme 3: Internship experience

This theme focuses on participants’ experience of their internships. The participants noted financial adversity and poor working hours which they describe as exploitation and lack of preparation for the profession. The theme is split into the sub-themes, “financial hardship,” “sink or swim,

“exploitation and “supervision (negative)” and supervision (positive).” The sub-themes financial hardships and exploitation have some overlap but are presented separately as financial hardship does not always equate to being or feeling exploited.

- **Sub-theme 3.1: Financial hardship**

Participant 3: “I earned hardly anything – I received R3000 which wasn’t enough to live on. My parents had to help out. I didn’t live very well and struggled to buy food. I shared a room in a flat with someone so that’s how I could survive.”

Participant 1: “For me the money was a real problem I also only got R4000 month. The other thing I think if you look at it, for me, is the academic. When I got in and you have to do the practical things, even though the university I was at is more practically orientated they focus too much on the little unimportant things and not enough on the practical side of it.”

Participant 6: “There is no maximum recommendation but from everyone I have spoken to wages are usually very bad very few people even now earn more than R5000 a month.”

- **Sub-Theme 3.2: Sink or swim**

Four of the participants experienced not having enough input from their supervisors and feeling that they had to “sink or swim,” another respondent had a generally good experience with some elements of being left to “sink or swim,” and a final participant did not experience this. This theme was also gleaned from responses to open-ended questions and deals with not enough guidance from supervisors during internships. The sub-theme has some overlaps with sub-themes 3.4 and 3.5 but is presented separately as it records statements about how the participants achieved some personal growth through “swimming.” The theme is supported by the following statements from participants.

Participant 5: “I covered for my supervisor. I think by the end of my internship I was wondering what I was doing with my life because I hated the job. You know it was terrible I hated my life, um... so it was a terrible experience but you still learn what not to do.....and you still learn about clients. The sink or swim thing.”

Participant 3: “Obviously, I mentioned that I had a negative experience and I don’t practice either but I do think that there were positives that came out of it. I mean sink or swim... I learnt to swim, I taught myself and for my own personal self I think I grew quite a lot that year...it was very hard but I did grow and learn about myself.”

Participant 6: Yes, I identify with that. You learn a lot about yourself and if you can't learn to swim you cannot grow as a person."

- **Sub – theme 3.3: Exploitation**

There was a general feeling amongst participants that interns are used as what can be termed "cheap labour," and that they are exploited during their internship year. Participants expressed fairly strong feelings in this regard as can be seen by the following responses.

Participant 4: "They exploit you basically for money and work."

Participant 1: "They know you have to do an internship so you have to take it wherever you can get it. There are so many people applying that you have to just take what you get and work. I only got R4000 you just have to take it and suck it up and get through it."

Participant 2: "Yes, that is what they are most interested in is not teaching you just making money off the intern."

- **Sub-theme 3.4: Supervision (generally negative)**

Several of the participants experienced generally very negative aspects of supervision from their supervising Biokineticists. This is underpinned by the following statements.

Participant 1: "Mine was very hands off and didn't really teach me anything. It was a case of just learn it yourself. Um...here is a client; here is what I think you should go do or do whatever necessary."

Participant 3: "If I saw my supervisor more than once per month it was a lot. So I did everything from day one. I did all my own evaluations right through. I don't know if I messed up or not. Luckily in the year that I was there no one came back. So Ya, I don't have any good things to say about my supervisor that I had. I had a very negative experience I had to work 12hours everyday alone just me running the gym. That is probably one of the reasons why I don't actually practice today."

Participant 5: "I wouldn't really say it was a pleasant experience. I think I learnt a lot in terms of learning how not to run a practice so...In terms of being personable with clients I learnt a lot about what not to do from watching my supervisor!"

- **Sub – theme 3.5: Supervision (generally positive)**

However, two of the participants had a generally positive experience with their supervising Biokineticists but did experience elements of negativity, particularly concerning being left alone and/or “in the deep end.” Responses also indicated that those participants who indicated a generally negative experience also found some positives in their internships. The sub-theme is supported by the following responses.

Participant 2: My lady was very hands on and treated me very well. I had a very nice lady that went through everything with me. She was very to the book with everything. I enjoyed her. She taught me most of the stuff that I thought that we should have learned in the 4 years before going there, especially in the Honours year.

Participant 6: “I didn’t have too bad a time but I was left alone a lot and my supervisor didn’t spend much time with me giving me feedback or anything. I just did what I was told.”

Participant 4: “I think my internship was good overall. I got good exposure at different practices. Every month I would change to one of the different practices that the supervising Bio had and each of these were based in a different environment. One was in a school, the other at a virgin active and the other was a private practice so that was cool. From that I decided where I would like to base my practice so, I learnt a lot. In terms of learning from my supervisor I did learn a bit of stuff in the first few months but then I was left a bit in the deep end. But in my first year of actual working, not internship, I learnt from my boss...I would call him a brilliant supervisor. He took the time to teach and I learnt a lot from him much more than from my supervisor in my internship year.

4.12.6 Focus group theme 4: Shortfall

The theme shortfall is broken down into three sub – themes firstly Shortfall (Honours Biokinetics) and secondly Shortfall selection (Biokinetic Honours) and Shortfall (Internship Biokinetics). The theme indicates what participants thought were the shortfalls or gaps in their Honours and internship years.

- **Sub – theme 4.1: Shortfall (Honours Biokinetics)**

Participant 1: “I think it’s only a year because you do a 3 year human movement science degree which gives you background then it’s only a year when you do Honours. It’s too much too quickly it’s all squashed in theory and practical together. There isn’t enough practical.”

Participant 3: “Theory and practical are at the same time so usually practical suffers.”

Participant 5: “Ya, no definitely. It’s also like any when you are with people do you get that when you go into your internship you don’t know what to do. Physios they know because they practice with each other from year 1, so by the time they get to their clients they are comfortable with it. But you are just kinda thrown into this [internship] from Honours because you do a lot of theory and you haven’t covered a lot of practicals. You haven’t seen enough people so you don’t know how to handle them. You don’t look confident which makes you look like you don’t know what you are doing. But in the meantime you actually don’t know what you are doing! It’s also bad for your confidence.

- **Sub – theme 4.2: Shortfall selection (Biokinetics Honours)**

Participant 5: “...I also think the selection process for Bio Honours where I did undergrad and Hons is very dodgy. The way that they do it’s not fair. If you are like in the 1st team rugby and they need you for another year you will be there.”

Participant 1: “Ya, in our year it was also very dodgy..... Ya it was terrible. A lot of people that got in didn’t pass everything... they seemed to be...what is the word ... [condoned] yes, condoned, they shouldn’t have been there. The people that should have been there that did have the marks and the need and passion to study, didn’t get in and had to do a year of nothing and wait to try and get in the following year or just do sports coaching.

Participant 6: “Yes, It happens. Some people get in because they seem to be favourites or something.”

- **Sub – theme 4.3: Shortfall (Biokinetics internships)**

Participant 1: “The client I have that has just got divorced makes it difficult for me. He brings all that stress onto you because you want to exercise him and he wants to talk about his divorce. It’s the same for all the divorced guys, so all their problems get thrown onto you. It is also hard dealing

with other people's problems because they are unloading onto you and you just have to bat it off and keep doing what you doing. If we had done more psychology, like practicals in it, it would have helped."

Participant 5: "I think that would help us a lot if we had to cover that in our learning programme. We would be able to deal with patients a lot better. Some people maybe don't necessarily have the people skills and this will help them clear their minds. Ya, we would just learn how to deal with those patients in a better way."

Participant 4: "My internship was quite good although I think where there is shortfall with the internships as well because I think that there is a rule that says an intern can only see patients on their own after a period of 6 months of working with their supervisors. I can guarantee you that half the supervisors or more working out there speak to you for a month and observe you with patients doing assessments and then after that you get thrown in the deep end. That, I think, is a shortfall. I don't think that it is right that we are thrown to do 8-12hours of work a day just to exploit our expertise, if you want to call it that.....um, you know just for the benefit of them having a cheaper employee."

4.12.7 Focus group theme 5: Ethics

A recurring theme during the focus group discussion was ethics. The participants had generally seen what they described as either ethical or unethical practice(s) or behaviours that took place during their internships. The following statements underpin this theme.

Participant 3: "Ya but Bios know their clients. They usually make sure that they don't watch two of the same sessions because the more they are there the more uncomfortable it is for the client so I don't think it's unethical."

Participant 5: "I definitely felt like I couldn't say no. Well my boss was quite hectic. I just couldn't. She was quite temperamental. I probably would have just been given a mouthful in front of everyone. She also used to speak about us to her clients so you never really wanted to step your foot out because you felt like she was going to be unethical. I probably spent 50 percent of my day just doing filing and admin work, basically being her Personal Assistant. Then when she didn't feel like

coming to work I would see clients but when she did come I didn't see clients. It was a big confidence killer because I didn't really feel like I knew what I was doing."

Participant 3: "I was just taught ask any code so that added up to the amount the supervisor wanted on the invoice...so I didn't know any better either..... Ya [Laughs]...I had to put in my own codes and do my little calculation on the side to make sure it added up to the right amount. It was very unethical."

Participant 6: ".....I can identify with [participant 5] about their supervisor not really being too bothered and happy to carry on and do personal training and pass it off as Biokinetics."

Participant 2: "I was very fortunate I think I learned a lot about running your own practice to rehab. I think I was in a practice that is supposed to be the standard but unfortunately, from what I hear now and what I have heard from others, it was more like an exception. I had a supervisor that did everything ethically and was supportive. I had a good experience but I don't practice!"

4.12.8 Focus group theme 6: Teaching

Participants made many comments, generally negative but some positive, about the teaching they received during their Honours years. This theme presents responses related to the teaching styles and behaviour(s) of lecturing staff both positive and negative

Participant1 "I thought mine was terrible. Honestly, some lecturers didn't pitch and didn't seem to care much when they did. One of the lectures I had just wouldn't pitch up for practicals. We would go to the gym and line up and wait for her to come and she just wouldn't arrive. Eventually we would end up reading the book and doing it ourselves on each other without any supervision. We complained to the department and HOD but they didn't do anything they would say that she is doing something for her Masters or PhD. So they were just like, "sorry," she has to do something for this and she can't come through. I mean it's your Honours year and you're just not getting anything and I also think a lot of the lecturers weren't very prepared for lectures. Sometimes if they had something more important they would just go through the work quickly and leave....and so I didn't enjoy it at all. I also feel we could have done a lot more during the year than what we actually did do."

Participant 2: “We had huge fights with our one lecturer because she didn’t know anything about academics and she would mark everything like a two year old. If you didn’t write the 10 steps you didn’t get the points. She couldn’t see the bigger picture in the theory. The people who did best in class just repeated her notes. For me it was very hard I came from a background where they taught you to think laterally and then when I arrived here it was like 2 steps backwards. It was very hard for me I must be honest.”

Participant 3: “I think we had one good lecturer and then we had a few questionable ones so it was kind of 50/50. Luckily the good lecturer took all of the important classes and taught most of the syllabus.”

Participant 4: “When it came to anatomy and our background I don’t think we could have had a better background. But then on the other hand we had very questionable lecturers. But you just have to make the best out of it whatever lecturers you get. They tended to teach the same thing year after year.”

Participant 1: “There is a huge difference between the standards of lecturing staff and also what is taught at different varsities when I compare my work to some of my friends work. It also depends what the lecturer is interested in. One lecturer we had would always ask the steps to quit smoking. Every single test you knew that would be there. In my final exam in my practical that is what he asked me. When I told him that realistically if you are working with people you can’t make them do anything, all you can do is inform them of the facts and help give some advice but ultimately the decision has to come from them. So I don’t think I got that right because we had a difference of opinion he just wanted the steps that work...according to him. But you know what I mean, the lecturers have an opinion which they try to force on you and if you don’t agree then it goes badly. I had one friend that studied Biokinetics last year currently doing her internship this year. I asked her what questions they got and it was basically the same that we got asked in the exact same order that we were asked. I actually told her what questions we got for our exam and she prepared them and got them. I mean if you have the same lecturers all the time they don’t change...they don’t keep up with new stuff.”

4.12.9 Focus group theme 7: Evaluations

It appears that most of the participants were not able to finish the required number of guideline evaluations in every category, only two participants said they had completed all the required minimum number of guideline evaluations. This theme is echoed in the ancillary questions (4.10.2 Non-completion of evaluations by intern Biokineticists). Reasons given for this are, the type of practice and too many interns at a specific placing. Supervisors signed off [here there is some crossover with theme 4.12.7: Ethics] however, it was noted that supervising Biokineticists face challenges in their practices. It was also suggested by some participants that evaluations carried out by the HPCSA (PPB) are not effective. The theme is thus broken down into sub theme Evaluations (interns) and Evaluations (practices).

- **Sub – theme 7.1 Evaluations (interns)**

Participant 1: “Some categories you would have more say knees if you were at an orthopaedic practice so you would see way more knees but not see cardiovascular or metabolic. Sometimes the practice specializes in say, knees then you don’t see hands.....”

Participant 4: “It’s very unlikely that you would see the numbers necessary unless you were based at a specialist practice so you might find people just making up numbers and the Bio signing of.”

Participant 6: “I didn’t do the minimum number in each category but I at least did more than one which has helped. It is difficult though. The Bios are accredited and run a practice and if they specialize what can they do? I think another plan needs to be made or no minimum numbers. You know, you could just find out if the intern is competent, that is the supervisor could get a patient or another intern or Bio to simulate problems and then they could gauge if the intern was competent in that area.”

- **Sub – theme 7.2 Evaluations (practices)**

Participant 4: “I think that is a bit of a front honestly. I have seen some people that have come in or rather around to mark off the practice as a suitable place and its nothing..... what I mean they just come in there and check the space and they don’t actually do much else...I have never seen them asking interns questions....they are gone in 30 minutes.”

Participant 6: “I think they pretty well do that with universities as well – I think there is a lot of window dressing.”

Participant 1: “Ya [Laughs] I don’t think they are effective and I agree with the window dressing thing.”

4.12.10 Focus group theme 8: Burning Bridges

This theme represent the inference that criticism is not given by students or interns at Biokinetics Honours year and their internship years respectively because they feel they cannot because of loyalty or fear of “burning bridges.” However, there was the realisation that this is how the process or poor teaching and internship practices become cyclical.

Participant 1: “You don’t complain because at the end of it you have got a job. You need to work. At the end of the day I have got medical aid, petrol, housing, food you have got to work. What if you complain and then you don’t qualify...”

Participant 2: “If you complain or send in complaints they might take it and use it against you...especially as some people stay in the practices they intern at. I would be too afraid to [complain].....Because you burn bridges in your future if they [supervisors] know who complained.”

Participant 6: “Yes, 1 [name removed] still works for his employer so you can’t then report someone and expect to still carry on working for that person. I suppose that is how the cycle continues and nothing gets done!

Participant 5: “We all had the same experience. I know people that I went to university with also had crappy experiences...but it’s like ok it’s over and you just carry on. It’s not like you have that many places to go because you don’t have a lot of experience so you stay there with that person and you just kind of suck it up..... and do the best you can. You don’t complain because you can’t.”

Participant 3: “It would be difficult to report something at Honours or in your internship because you would be too scared because, at the end of the day, you need to qualify and work...I mean what if they said no you haven’t done this or that so you must re-do your internship or Honours...”

4.12.11 Focus group theme 9: Suggestions

This theme is broken down into several sub-themes which represents the areas where participants thought improvements could be made. Suggestions for specific improvements that could be made in Biokinetic Honours and Biokinetic internships are presented below. The sub – themes are Biokinetic Honours (improvements), Biokinetic internships (Improvements) and Community Service. Community service was seen as a way of making the profession better known and ensuring equitable pay.

- **Sub – theme 9.1: Focus group Biokinetic Honours (suggestions)**

Participant 4: “I think Biokinetics has to be more focused because anyone can do human movement science for 3 years. If you’re doing Biokinetics it should be more focused on Biokinetics. I am going to be honest with you, when I entered my internship year and they ask you to give exercises for a back injury you don’t actually know what to do because they don’t teach you different types of exercises in your Hons year.”

Participant 6: “I think what we are trying to say is that it is all theory and not practical or applied and we need more practical application of psychology and more focus on rehabilitation at Honours level. We also didn’t cover the basic aspects practice management [Probe, Such as?]. Well things like billing and ICD 10 codes and I guarantee you no one have any idea about tax and provisional tax and things like that.”

Participant 5: “I think that would help us a lot if we had to cover that in our learning programme [transference – psychology] at Honours. We would be able to deal with patients a lot better. Some people maybe don’t necessarily have the people skills and this will help them clear their minds. Ya, we would just learn how to deal with those patients in a better way.”

- **Sub – theme 9.2: Biokinetic internships (suggestions)**

Participant 4: “Ya, but mine was okay in that at the end of my internship I had a final meeting with my supervisor and he gave me a questionnaire sheet where he ask me where he can improve on his supervision and as a supervisor and all of that. So I was honest in that and Ya, it was constructive criticism. I said what I thought he could improve on and I think the fact that he gave me a form to fill out showed me that he was interested in what I thought. All supervising Bios should do get

feedback from their interns..... Physios [Physiotherapists] and psychologists earn much more. The rates need adjusting. Well it's just a set rate for medical aids but you can charge over and above that rate and your patients just have to understand that. You just have to tell them that and generally I think that people understand that because we are in a medical environment. If you look at Physiotherapists and Chiropractors we study pretty much the same in terms of year...we are almost the same as them in terms of what we do and there is only one little bit of separation between us and the fact that they can charge...I think....double the amount for an half an hour session whereas the Bio is generally doing a full hour I think that it is unfair. Psychologists earn a lot more I have heard as well. This should be taken up by BASA or our division of the Health Professions with the medical aids.

Participant 3: "I think what 5 [name removed] said...you learn what not to do. I think in some ways we may have been too harsh on our supervisors because I think there is also a shortfall in that there if there is a protocol to follow for them being a supervisor it isn't very good. I think what they should do is a 4 week course and go through what they should do with their interns, I mean the people running the HPCSA in our division could appoint people to do it and it could be part of CPD points because you couldn't expect someone to pay for it and not have some credit somewhere. Something needs to be done because now it has come to that point where supervisors are only employing interns because it is cheap labour and it shouldn't be about that."

Participant 6:"I think Physios [Physiotherapists], Chiro [Chiropractors] and Psychologists do a year more training. Ya, for sure they do a year extra. Maybe this is a gap in the training that needs to be covered. And to do that someone mentioned saturation, maybe the market will be less saturated and people will find it easier to make a living because people will be able to afford to pay a bio intern what they should pay them."

- **Sub – theme 9.3:Community Service**

Participant 1: "Community Service would be good. Physios and OT's [Occupational Therapists] do it. Then you will have to go into rural areas and people will know about it. There should be Bios in all the hospitals as well, not in private practice, paid by the government....that would help a lot....Ya that would be good. The Department of health they would pay you and you would meet the need in rural areas."

Participant 5: “They [people in rural areas] would definitely benefit from us doing Comm Serv. I am just thinking with what people go through in their lives it wouldn’t be a priority. Getting people there would be the thing there would have to be transport services like at the hospitals.”

5- “When I was at Wits one of our rotations was at JHB General because it was just across the road. We would go there and shame they would stand in queue in the physio section and then they would come to us for one hour and it’s just that one hour. But they can’t...you know those people can’t come to the hospitals twice a week to see the Bio....so Comm Serv would have to be structured properly.”

4.12.12 Focus group theme 10: Inclusivity

Towards the end of the focus group session it was noted by participants that the Biokineticists are mostly White and seem to be predominately female. It was noted that the profession needs more exposure [See 1.2 Marketing] and that it should be more inclusive in terms or race.

Participant 4: “You know we do seem to have a lot of females in the profession which is mostly White there are very few from other groups.”

Participant 1: “Ya, I think it is predominately white females who are qualifying now and we don’t have many rural practices or Black Biokineticists....”

Participant 6: “And surely they are the ones that should know what it is because they should be referring. You know we need more Black Bios I don’t think most schools know what a Bio is so they are not likely to promote it. I also noticed that in my year we had a Black guy doing Biokinetics and he really struggled with the stats and concepts in anatomy. He was from a rural school – I think bridging courses can be introduced to help.”

4.12.13 Tabular summary of main themes and sub-themes for the focus group - A tabular summary of the main themes and sub – themes for the focus group is presented.

Table 5: Summary of main themes and sub-themes for the focus group

Themes	Sub-Themes
1: Biokinetics future – the field is interesting and has a future in South Africa. Only a professional field in the country but qualifications can be ported.	1.1 Niche – There is a niche in the health professions for Biokinetics in South Africa. 1.2 Marketing – the profession under-marketed in the country thus not well known. 1.3 Good living – a good living can be made depending on where the practice is situated.
2: Saturation – deals with overload of Biokinetics market	Too many interns qualifying and too many practices in close proximity.
3: Internship experiences – broken down into five sub – themes.	3.1 Financial hardship - not paid a living wage. 3.2 Sink or Swim – interns thrown in at the deep end with not enough experience. 3.3 Exploitation – interns used as cheap labour. 3.4 Supervision (generally negative) – not enough guidance from supervisors. 3.5 Supervision (generally positive) – good guidance from supervising Biokineticists.
4. Shortfall – this is split into three sub-themes and gives participants perceptions of gaps in their Biokinetics Honours and internship years.	4.1 Shortfall (Honours Biokinetics) – gaps in the Honours year. 4.2 Shortfall selection (Biokinetics Honours) – perceived shortfalls in the Honours selection process. 4.3 Shortfall (Biokinetics internships) – gaps in the internship process.
5. Ethics	Deals with ethical issues for instance, incorrect coding and billing and working outside interns scope of practice.
6. Teaching	Issues related to teaching during Honours mostly poor teaching practice and outdated material, positives in terms of research.
7. Evaluations – the theme was broken down into two sub – themes pertaining to evaluation.	7.1 Evaluations (interns) – some interns did not meet minimum number of guideline evaluations. The majority however, did. 7.2 Evaluations (practices) – evaluations by the HPCSA is regarded as window dressing. Participants did not complain because of fear.
8. Burning Bridges	
9. Suggestions – this theme is broken down into three sub – themes giving participants suggestions in specific areas.	9.1 Biokinetic Honours (suggestions) – suggestions that could improve their course 9.2 Biokinetic internship (suggestions) – suggestions that participants thought could have improved their internship. 9.3 Community Service – would improve the profession overall.
10. Inclusivity	The profession needs to be more inclusive in terms of race and practicing in rural areas.

4.13 Presentation of phone interview results

The phone interview had a semi-structured interview schedule based on the focus group questions and the survey protocol. Interviewees provided their e-mail address and gave consent electronically however; they were still given this information before the start of the interview and advised they could terminate the interview at any stage. They were also advised of the confidentiality of the interview. The interviews were conducted in English as all participants' stated they were bi-lingual and comfortable being interviewed in that medium (they were given the choice of being interviewed in either English or Afrikaans). The phone interviews were recorded using the application on the researcher's cell phone and transcribed directly after the interview ended. The average time for the interviews was 12 minutes and 45 seconds. The demographic results for the phone interviewees are presented first and then themes arising out of data transcribed from the interviews.

4.13.1 Demographic results (phone interviews)

Table 6: Demographic information (phone interviews)

Participant	1	2	3	4
Age	30	29	25	28
Gender	Female	Female	Male	Male
Race	White	White	White	White
Language	Afrikaans	Afrikaans	English	Afrikaans
Year of internship	2008	2009	2012	2010
Undergrad degree	University of Stellenbosch	University of Stellenbosch	University of Johannesburg	University of Stellenbosch
Biokinetics Honours	University of Stellenbosch	University of Stellenbosch	University of KwaZulu-Natal	University of Stellenbosch
Province where internship completed	Western Cape	Western Cape	Western Cape	Western Cape
Presently working in which Province	Western Cape Urban practice	Western Cape Urban practice	Western Cape Urban practice	Western Cape Urban practice

Table 6 indicates that two of the participants were female and two male. The two female participants were aged 30 and 29 years and the two male participants 25 and 28 years of age. Both of the female participants are White first language Afrikaans speakers while both males are White and one is a first language English speaker and the other a first language Afrikaans speaker. One

female completed her internship in 2008 while the other completed in 2009. One of the male participants completed his internship in 2012 and the other completed his in 2010. The two female participants finished their undergraduate degrees at the University of Stellenbosch while one male participant completed his at the University of Johannesburg and the other at the University of Stellenbosch. The two female participants completed their Honours year at the University of Stellenbosch as did one of the male participants the other male participant finished his at the University of Kwazulu-Natal. All participants finished their internships in, and are currently working, in the Western Cape in urban practices.

4.13.2 Presentation of themes arising out of the phone interview data

The analysis of data arising out of the phone session is presented as themes which arose naturally out of the data using the process of Thematic Content Analysis (TCA). The themes arising out of the phone interview data are presented in no specific order with all the statements from participants supporting a given theme or sub – theme. All the participants’ responses were presented verbatim, as transcribed, punctuation was added where the participant paused during the conversation. It was decided to use all the statements given by participants, as it is a small sample and data is manageable, thus there is no transcript provided as all responses are in the text. However, a transcript of the questions for the semi-structured interview is provided in appendix 7. Colour coding is used as themes are also presented in a tabular format at the end of the section. After the responses were transcribed, the interviewees were phoned and the transcript read back to them to ensure that what was transcribed was a true reflection of what they had said. The interviewees all verified the transcriptions.

4.13.3 Theme 1 phone interview: Experience (Biokinetic Honours)

The theme came out of the positive and negative experiences the phone interviewees described in their interview. The theme is broken down into three sub-themes Biokinetics Honours (constructive experiences), Biokinetics Honours (undesirable experiences) and Biokinetic Honours (recommendations). In the final sub-theme participants gave their recommendations as to how they thought the course could be improved. The themes are supported by the statements given by each participant under each theme.

- **Sub – theme 1.1: Biokinetic Honours (constructive experiences)**

Participant 1: “Well, we had quite a good year and we had some excellent lecturers and they really helped us understand the work and were always available.”

Participant 2: “The best thing was the practicals a great experience and it was good being hands on for the first time, we should have had more though. Overall the experience was good.”

Participant 3: “I really enjoyed the research project it was very interesting and I had a good lecturer as my supervisor. It really motivated me to carry on with my qualifications after my internship. I think if you have a good lecturer as a supervisor on your research you will be inspired to carry on researching in our field.”

Participant 4: The practical part of Honours was the best. Before the practicals I wasn't so sure if I really wanted to be a Bio but after them I knew I did.

- **Sub – theme 1.2: Biokinetic Honours (undesirable experiences)**

Participant 1: “We had a couple of bad lecturers as well as good ones. I think the worst thing was that one of the lecturers was not approachable and didn't want to tell us exactly what was wanted...That lecturer was always too busy and not in the office. The majority were really good though. I really enjoyed working with the rugby club and we all had a lot of hands on experience, it was overall a good experience.”

Participant 2: “I don't think we did the hours we were supposed to [for practicals], it didn't seem like it. The worst thing was one lecturer just didn't give any scope for exams or tests and told us we must just learn everything. I mean that is really unfair. We looked at old papers and saw that he gave similar questions every year and took a chance...it worked. But that isn't good I mean the questions are just the same asked in a different way...he also didn't like to give good marks.

Participant 3: “I must say though course delivery was not all good and a lot of the lecturing was really not so hot. Like it was old material and was not so relevant. I realised this because of the research I was doing. Some lecturers really didn't seem to care and just came in and out in 15 minutes and said just carry on and do the work I have given you.”

Participant 4: “You know the most difficult thing was that lecturers didn't make it clear what they expected from us for assignments and things...and this was the majority. Just, “do it” was what we

were told if we went to ask and when it was wrong well we had to do it again or get a bad mark. I really think that was unfair.”

- **Sub – theme 1.3: Biokinetic Honours (recommendations)**

Participant 1: “Well, it was a pretty good course... Umh I think that we should have been taught about how to run a practice cos I knew nothing about tax or anything when I started practicing after internship. I think there should be another module about how to manage a practice...something like that.”

Participant 2: “Yes, the thing is we should have evaluated the course and we didn’t not properly. We didn’t evaluate the different lecturers and we should have. I found out from one of my friends that her university had each course evaluated and then they did it overall. That should be done everywhere.”

Participant 3: Course delivery! Ya, and, overall lecturing...the HOD should keep a better eye on lecturers to make sure they keep up with all the new stuff and do their job properly.”

Participant 4: “Er, well, I think that there is too much work and too little time and lecturers didn’t tell us properly what they wanted. They must have better course outlines and they should also be sure that the amount of work can fit into the time. I don’t think it is properly worked out. Perhaps the theory at Honours should always kept up... mine was not all up – to – date.”

4.13.4 Theme 2 phone interview: Challenges (Biokinetics internships)

The theme came out of the positive and negative challenges the phone interviewees described in their interview. The theme is broken down into three sub-themes Biokinetics internships (motivating challenges), Biokinetic internships (de-motivating challenges) and Biokinetic internships (ideas). In the final sub-theme participants gave their recommendations as to how they thought the course could be improved. The themes are supported by the statements given by each participant under each theme.

• **Sub – theme 2.1 Biokinetic internships (motivating challenges)**

Participant 1: “Ya, you know the best thing was working with lots of different people with different illnesses and injuries. I found that motivating.”

Participant 2: “I loved seeing the clients that was “sommer lekker”....

Participant 3: “My internship was good in the practice [probe: in the practice or doing practicals?]. Ya, I mean doing evaluations in the internship I was in and I liked it....it was the best...”

Participant 4: “Actually, I had a great experience I had a fantastic supervisor who really was hands on. I really got to know how to do things properly...I had lots of exposure and it really helped me gain confidence in my ability.”

• **Sub – theme 2.2 Biokinetic internships (de-motivating challenges) – here only 3 participants had any de-motivating challenges**

Participant 1: “The biggest challenge was that I didn’t get enough supervision from my supervisor...it was, well de-motivating. He did tell me theory before I saw a client but he was not hands on...he didn’t show me or help me and he was nice but a bit, what can you say, distant. I didn’t like to ask him he was not so approachable. I did feel that he had interns to run his practice for money...honestly, he didn’t seem that interested. Well, I also think the interns pay is bad. When I was an intern my parents paid for my flat and petrol. That’s really bad...I mean you are working and can’t pay your own way.”

Participant 2: “...but my supervisor wasn’t around much. At first he was there but he didn’t really show me much and then he just wasn’t there. I think it is really scary being left alone cos you’re not always sure you’re doing the right thing...when I look back I realise I wasn’t always right. Mmmh, I think that no one seems to know what a Bio is I think the profession needs more publicity.

Participant 3: “...but there was one big problem I didn’t get orthopaedic experience because the practice was aimed more at cardiovascular patients. I think this was a problem for me because I then got a job in a practice that was more orthopaedic. [Question: Did you complete all the evaluations you had to for orthopaedics?] No, I didn’t but it was signed off ...actually, no one read the thing that was handed in I don’t think it was just signed off.”

• **Sub – theme 2.3 Biokinetic internships (ideas)**

Participant 1: “I don’t know...maybe the Bios need to be more interested in training so maybe there should be an emphasis on making sure they train properly...you know not just use the interns to make money. Do they give them CPD points for training interns? I don’t know. If they do they should make sure that they train properly if not well, maybe, they could get some sort of course together [Probe: who do you mean by they?]. I mean BASA or the Health Professions Council I suppose...could be the universities as well.”

Participant 2: “Well, Bios shouldn’t leave you alone so much. I suppose they should be monitored in some way...not sure how though. Well, I suppose someone could go from practice to practice [Comment: Are you aware that accredited practices are evaluated by our division in the HPCSA?]. Oh, yes I suppose but I am not sure that is enough. Oh yes, they need to improve the pay...I really struggled and worked late at night in a restaurant...it was exhausting and I still had to ask my mother for more money.”

Participant 3: “Yes, I think there should be varied rotations at different centres and practices and then you get multiple exposure to different patients and clients. I really think this should be done as I struggled during my first 6 months working at the new practice....my boss expected me to know knew what I was doing because at the interview I had to say I had done the evaluations I was supposed to have...luckily other Bios helped me out if I was a bit stuck. I eventually told my Boss and he laughed and said, “You’re not the first.”

Participant 4: “I wouldn’t change anything and can’t think of any way I want to improve it.”

4.14 Tabular summary of main themes and sub-themes for phone interviews

A tabular summary of the main themes and sub – themes for the phone interviews is presented for ease of reference.

Table 7: Tabular summary of main themes and sub-themes for phone - interviews

1. Experience (Biokinetic Honours)

1.1 Biokinetics Honours (constructive experiences) – participants positive experiences in their Honours year, excellent lecturers and hands on experience.

1.2 Biokinetics Honours (undesirable experiences), poor teaching and course delivery.

1.3 Biokinetics Honours (recommendations) – participants’ recommendations for improving the course experience, proper evaluations.

2. Challenges (Biokinetics internships)

2.1 Biokinetics internships (motivating challenges) – those challenges which encouraged participants, seeing clients and good supervision

2.2 Biokinetics internships (de-motivating challenges) – events which de-motivated participants, poor supervision not enough categories in evaluations.

2.3 Biokinetics internships (ideas) – participants’ ideas for improving internships, rotations and better evaluations.

CHAPTER 5: DISCUSSION OF RESULTS

- 5.1 Introduction
 - 5.2 Discussion of quantitative results
 - 5.3 Summary and discussion of demographic results for Biokineticists evaluating their internship
 - 5.4 Summary and discussion of results for the Course Experience Questionnaire – CEQ (Ramsden, 1991)
 - 5.5 Summary and discussion of demographic results for Biokineticists evaluating their internship
 - 5.6 Summary and discussion of demographic results for supervising Biokineticists evaluating interns
 - 5.7 Summary and discussion of results for Supervising Biokineticists evaluating interns
 - 5.8 Adequate training of interns
 - 5.9 Discussion of qualitative results
 - 5.10 Summary
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5.1 Introduction

This chapter discusses and integrates results presented in the previous chapter together with relevant research presented in the literature review. Quantitative results are discussed first followed by a discussion of the qualitative results.

5.2 Discussion of quantitative results

Results from the surveys are summarised, discussed and presented in the following order firstly results from the survey requesting Biokineticists to evaluate their internship year followed by a summary of the results from the supervising Biokineticists questionnaire requesting them to evaluate intern Biokineticists. Demographic results are summarised first, for each survey, followed by a précis of results from the other sections of the questionnaires making up the survey protocols.

5.3 Summary and discussion of demographic results for Biokineticists evaluating their internship

A total of 47 participants took part in the quantitative survey for Biokineticists evaluating their internship more than two thirds were female (72.34%) and just under a third (27.34%) male. The participants ranged in age from 22 to over 31 years. The overwhelming majority were White (91.49%). Anecdotal evidence suggests (See, 4.12.12 Focus group theme 10: Inclusivity) that there are more females being trained and practicing in the profession than males and that both males and females in the profession are typically White. The researcher was unable to confirm this as the HPCSA (PPB) was unable to provide the information as they were updating their database. The majority of respondents (40.33%) reside in Gauteng and the Western Cape (31.91%) followed by the Eastern Cape (14.89%). Only 6 (12.76%) participants reside in other provinces in the country. The majority of participants thus hailed from Johannesburg, Cape Town and Port Elizabeth. According to BASA (2013) the majority of Biokinetics practices are in Gauteng and the Western Cape thus, although the sample is small, it does relate to the practice demographic in the country.

Participants gained their undergraduate degrees at a range of universities across the country. The majority studied at the University of Johannesburg - UJ (23.40%), Nelson Mandela Metropole University - NMMU (19.15%), the University of the Witwatersrand - Wits (17.02%), the University of Stellenbosch - Maties (12.77%) and the University of Pretoria - UP (10.64%). The remainder studied for their undergraduate degree at the University of Potchefstroom – Potch (8.51%), the University of the Free State – UFS (6.38%) and the University of Zululand – UZ (2.13%). Participants completed their Honours in Biokinetics at universities in different provinces in the country NMMU (23.40%), UJ (14.89%), Potch (10.64%), Maties (10.64%), the University of Cape Town - UCT (8.51%), UP (6.38%), Wits (12.77%), UKZN (6.38%), UFS (4.26%) and UZ (2.13%). The majority of the sample finished their internships during the period 2010 – 2014 (65.96%) and the rest (34.04%) completed their internships before those dates. Over half of the sample completed their internships in Gauteng (51.06%), with 21.28% completing in the Western Cape and 14.89% completing in the Eastern Cape. This makes up 87.23% of the sample only 12.77% completed their internships in other provinces. Notably over two thirds of the sample (72.34%) completed their internships in Gauteng and the Western Cape, in urban areas, where the majority of Biokinetics practices are situated. In Gauteng 46% of Biokinetics practices are found, in the Western Cape, 22% and the remaining 32% of practices are spread across the country (BASA, 2013).

5.4 Summary and discussion of results for the Course Experience Questionnaire - CEQ (Ramsden, 1991).

On the Course Experience questionnaire there were no significant differences between male and female participants with regard to their experience of the Biokinetic Honours course. It must also be stated that participants who marked the neither agree nor disagree box on the CEQ questionnaire may not have given an answer because they were neutral or unsure about how to answer the question, or did not want to give a more definite answer because they felt unsure about whether the questionnaire was totally confidential. Some researchers leave out this type of response as they feel it may lead to “response set,” when some participants just tick the so-called neutral answer as they do not have to commit themselves, or they do not feel entirely sure the questionnaire or survey is completely confidential thus give guarded responses (Personal Communication Prof K.Nel, 12.1.2015). However, as the questionnaire was standardised, and has been used successfully in previous course evaluations (Downey & Muller, 2011; Stergiou & Airey, 2012), the neither agree nor disagree option was not changed. Likert Scale responses, unless otherwise indicated were, “Strongly Disagree,” “Disagree,” “Neither Agree nor Disagree,” “Agree” and “Strongly Agree.”

The following responses to questions on the CEQ indicate that most of the participants were positive in their appraisal of staff teaching and feedback in their Biokinetic Honours year. The implication is thus that the course adequately prepared them for their internship year. This generally supports results from research in another health related field (Clinical Psychology) where the majority of the sample (55.3%), in research by Pillay and Johnston (2011), found their training had adequately prepared them for the challenges of internship. The majority of the sample (70.21%) agreed or strongly agreed that staff put a lot of time into commenting on their work and also agreed or strongly agreed (78.72%) that staff normally gave helpful feedback. Seventy nine point four seven percent (79.4%) of the sample agreed or strongly agreed that Biokinetic Honours helped them develop their ability to work as a team member and 55.32% strongly agreed or agreed that they always knew the standard of work expected of them and usually had a clear idea of where they were going and what was expected of them (65.96%), however, over a third disagreed, didn't agree or disagree, or strongly disagreed (44.68%). This indicates that although the majority knew what was expected of them some participants did not know, did not want to commit to a positive or negative answer or were unsure. In response to a similar question 70.21% of the participants either agreed or strongly agreed that staff made it clear right from the start what they expected of students. Seventy eight point seven two percent (78.72%) of the sample agreed or strongly agreed that the teaching

staff motivated them to do their best work and the overwhelming majority 80.85% replied that Honours Biokinetics provided them with a broad overview knowledge in the field. Respondents also agreed or strongly agreed that their lecturers were extremely good at explaining things (63.83%), worked hard to make lectures interesting (68.09%) and made a real effort to understand any difficulties they might be having (57.45%). These results, to some degree underpin Kardash's (2000) conclusion that learned skills enhance students and lecturing staff's overall perceptions of their individual ability in a positive manner. However, just under a third of participants (31.91%) agreed or strongly agreed that it was often hard to discover what was expected of them during the course and over a third (34.04%) neither agreed nor disagreed which suggests that although teaching staff were positively regarded in terms of motivation and teaching participants were generally unsure of the overall aims and objectives of the course even though most were aware of the standard of work and what lecturers expected from them.

Bennet (2008) suggested that importance is given to how learning influences personal and professional development. The following results suggest that Biokinetics Honours helped participants acquire a specific skill set which helped build their general self-confidence. The majority of participants agreed or strongly agreed that the course sharpened their analytical skills (74.47%), helped them develop confidence to investigate new ideas (59.57%) and develop their problem solving skills (68.09%). The course also helped stimulate the enthusiasm of the majority of participants for further learning (61.71%) and improved their written communication skills (70.21%). This is a positive as Fiore and Joseph (2005) report that lack of communication in any work environment leads to problems as individuals are uncertain of what their actual responsibilities are. Seventy four point four seven percent (74.47%) of participants also agreed or strongly agreed that the course had helped them apply principles to different situations. Ninety five point seven five percent (95.75%) of the sample agreed or strongly agreed that what they had learnt valuable to their future. The majority of the sample 72.34% agreed or strongly agreed that as a result of the course they felt confident about tackling unfamiliar problems which helped them develop the ability to work on their own (72.34%) and encouraged them to value perspectives other than their own (78.72%). Overall, the majority of the sample agreed or strongly agreed that they were satisfied with the quality of their Biokinetic Honours year (68.08%). It is likely that those less satisfied were more likely those who regularly complain to family and, friends outside of the workplace and peers within the workplace as reported by Chen et al., (2011). This could be related

to personality and learning styles which are very seldom evaluated in selections for medical programmes or for medical internships (Yates, 2014).

The proposition that: Biokineticists are satisfied (85.11%) with their course experience during their Honours year is supported. A Chi-square test indicated that there were no statistically significant differences were found between male and female participants in this regard ($p = 0.391$). That is, there are no significant differences between male and female participants in terms of course satisfaction.

5.5 Summary and discussion of results for Biokineticists evaluation of their internship

On the questionnaire related to Biokineticists evaluation of their internship there were three results, using the Chi-square test where significant differences between male and female participants ($p \leq 0.0500$) were found. Male participants were statistically significantly more likely to disagree or strongly disagree that they were given adequate feedback by their supervisor ($p = 0.0451$). Females however, were statistically significantly more likely than males to strongly agree or agree that they “felt free” to express their opinion without worrying about any negative actions or responses from their employer ($p = 0.005$). Females were also more likely than males to strongly agree or agree that in their opinion they were “fairly” treated by their internship supervisors ($p = 0.035$). This supports other research relating to internships in health related fields (medical) where a few significant differences were found between male and female interns in terms of educational practices and behaviour (Kardash, 2000; Ezubeir & Rizka, 2003; Bartels et al., 2008).

On the rest of the questionnaire there were no significant differences between male and female participants. The explanation under 5.3 pertaining to the neither agree nor disagree option remains the same for this non-standardised section of the questionnaire as internal reliability for the entire scale was appropriate for a survey protocol. Likert Scale responses, unless otherwise indicated were, “Strongly Agree,” “Agree,” “Neither Agree nor Disagree,” “Disagree” and “Strongly Disagree.”

Sein and Tumbo (2012) reported that intern medical doctors need effective supervision to increase active experiential learning; the following results suggest that the participants had a generally supportive supervisor and appropriate learning was therefore likely to have taken place. The majority of participants (59.57%) either agreed or strongly agreed that their supervisors delegated

Biokinetic work effectively and that their supervisor was always available to them when they had questions (65.95%). They also either agreed or strongly agreed that the work given to them was appropriate for an intern Biokineticist (57.54%) and that they knew what was expected of them (57.45%). Just over 50% of participants also strongly agreed or agreed that their employers recognised their achievements when they did a good job (51/06%) however, over a quarter (27.66%) neither agreed nor disagreed and a further 21.7% either disagreed or strongly disagreed with the statement, which suggests some ambiguity to the question by almost half of the sample (48.93%). The majority of participants also agreed or strongly agreed (76.6%) that there is an increasing demand for Biokinetic services which, by inference, suggest that they see a future for the profession.

Participants either agreed or strongly agreed that intern Biokineticists should receive better remuneration (76.60%). The majority of interns received paid holidays (63.83%) however, some did not. Two related questions gleaned similar data however, some participants responded to the two questions using the “neither agree nor disagree option.” It is possible that they did not read the questions properly, did not want to answer the questions because of issues related to confidentiality or suffered from response set. Two further questions relating to remuneration gleaned the following information. The majority of participants were paid by a salary (85.11%), one (2.13%) was paid by commission only and the rest were paid a basic salary plus commission (12.77%). Participants received pay ranging from less than R1 500 a month to more than R10.00 per month. A perusal of the questionnaires found that the lowest paid respondents were not necessarily those who had qualified before 2010. Just over third of participants (34.04%) earned between R1500 and R2999 a month. A further 34.04% earned from R3000 to R4999 per month and 12.77% or 10 participants earned R10 000 a month or more. The national minimum living wage requirement for 2013 was R3500, 2012 = R4000 and 2014 = R4500 (Coleman, 2013). The data indicates that interns generally earned wages that were fairly low, though probably meeting the minimum wage requirement in the year they qualified. However, even though many participants earned a relatively low wage the majority of participants either agreed or strongly agreed that their working conditions were good (70.27%) and their working hour’s fair (55.06). However, over a quarter of the sample ticked the “neither agree nor disagree” option possible reasons are response set or not wanting to commit themselves for various reasons. The majority of participants (65.97%) completed their internships between 2010 and 2014. These findings support those of Erasmus (2012), in terms of remuneration, who found that medical interns often reported underpayment, particularly when they had to do

overtime. Generally, these results suggest that participants interned in practices that enabled them which, according to Sein and Tumbo (2012), is required for an optimum working environment. It would also seem that this supports early research by Daugherty et al., (1998) which researched anecdotal concerns about medical students supposed unhappiness with their internships, because of poor pay and bad working conditions. Results from the study found that subjective complaints or hearsay were incorrect as the majority of respondents in the sample were generally satisfied with their internships. The general unhappiness of some participants, who tend to verbalise complaints, may be related to individual personality characteristics and learning styles which are rarely assessed in selections for any health related programmes (Yates, 2014).

The majority of participants strongly agreed or agreed that they were adequately trained after leaving university and entering their internships (51.06%) however, over a quarter did not (25.54%) and 23.4% neither agreed nor disagreed with the statement which may suggest some uncertainty amongst the sample. However, after leaving their internship 65.95% of participants either agreed or strongly agreed that they felt adequately trained. In this case 23.4% of the sample disagreed or strongly disagreed (thus they felt inadequately trained) and just over 10% answered using the “neither agree nor disagree” option (10.64%). The majority of participants either disagreed or strongly disagreed they were asked to do things they would consider unethical in terms of ethical guidelines for the practice of Biokinetics however, 17.03% agreed or strongly agreed with the statement suggesting that they felt they had been asked to do something they considered unethical. Fourteen point six eight percent (14.68%) of the sample ticked the “neither agree nor disagree option.” The majority of the sample felt that the internship year was long enough (74.74%) with under a quarter reporting it was too short (21.28%) and 4.26% or two participants stating it was too long. Over two thirds of the sample stated “Yes,” there should be a standardised board exam written at the end of the internship with under a third stating “No” there should not. Overall, results suggest that the majority of participants’ felt they were adequately trained after their Biokinetics Honours year, which was reinforced in their internship year. This suggests that participants’ working and learning environments were supportive and facilitated learning (Sein & Tumbo, 2012). This is further supported by the statistic that 87.23% of the sample is still working in the field while 14.89% (7 individuals) are not.

Overall, the majority of participants completed or did more than the required minimum guideline number of evaluations required in each category (See table 1). In this paragraph the number of participants who did not meet the guideline number of evaluations is specifically noted as all

participants had their form 170 forms (handed in to the HPCSA PPB so they could register as Biokineticists) signed off. The most likely reason for this is that many accredited practices focus on specific categories thus do not get many clients in other categories and/or that the practice has too many interns so that there are not enough clients in specific categories for all of them to evaluate (See 4.12.9, Focus group theme 7: Evaluations). However, interns that do not find clients in all the categories in the practice they are interned have the option of requesting permission from the supervising Biokineticist to find these patients elsewhere. It seems Biokineticists, when they were completing their internships either did not know this, did not want to ask or asked and were refused this option. This was not mentioned in the open-ended questions or focus group discussions. However, supervising Biokineticists should know this and ethically they should let their interns know and give them the chance to complete the required number of guideline evaluations. The following number of participants did less than the minimum number of guideline evaluations in each category: Healthy Individuals - 8 (17.02%); Individuals at risk - Cardiovascular/pulmonary 13 (27.66%); Metabolic 11 (23.40%); Orthopaedic (participants did not specify which category in orthopaedic), 4 (8.51%); Individuals final phase rehabilitation – Cardiovascular/pulmonary 12 (25.33%); Metabolic 10 (21.28%) and Disabled 19 (40.43%); Orthopaedic final phase rehabilitation – Foot/ankle/lower leg 7 (14.89%); Knee/thigh 1 (2.13%); Hip 3 (6.38%); Back 1 (2.13%); Neck 6 (12.77%) and Arm/hand 19 (40.43%). The minimum number of evaluations not completed by some of the participants is worrying as it is unlikely they are competent in those areas when they qualify. However, 46.81% of participant did report that their supervisors let them perform additional assessments or evaluations even though the HPCSA (PPB) were met, conversely over fifty percent (53.19%) did not perform any additional evaluations or assessments.

The proposition that: Biokineticists are satisfied (89.28%) with their internship year experience is supported. A Chi-square test indicated that there were no statistically significant differences were found between male and female participants in this regard ($p = 0.293$). That is, there are no significant differences between male and female participants satisfaction in terms of their internship year.

5.6 Summary and discussion of demographic results for supervising Biokineticists evaluating interns

Twelve female and eight male supervising Biokineticists took part in the study 10% were between 25 – 29 years of age, 6 between 30 – 34 years of age, 5 between 35 – 39 years of age, 2 between 40 – 44 years of age and finally 5 were 45 – 49 years of age. Twenty five percent (25%) were Indian and 75% White. As noted in 5.3 anecdotal evidence suggests that there are more females than males and more White Biokineticists than Black, Indian and Coloured Biokineticists. However, some degree of diversity is seen in this demographic. They were located in different provinces with the most residing in Gauteng (40%), followed by Kwazulu-Natal (20%), Eastern Cape (15%), Western Cape (10%), North West Province (5%) and the Northern Cape (5%) and Limpopo (5%). All reside and therefore practice in urban areas, 35% live in Johannesburg, 5% live in Pretoria, 10% live in Cape Town, 20% reside in Durban, 5% live in Polokwane, 15% live in Port Elizabeth and finally 5% live in Upington and 5% live in Potchefstroom. Fifteen percent (15%) were accredited to take interns in the years 1990 – 1994, 70% were accredited to take interns between the years 2005 – 2009 and 15% between 2010 and 2014. Seventy percent (70%) of participants have supervised 1 - 4 interns since being first accredited, 10% have supervised 5 – 9 interns and 20% have supervised more than 20 interns since first being accredited. Forty five percent (45%) of the sample are accredited to take 1 intern, 20% are accredited to take 2 interns, 10% accredited to take 3 interns and 25% are accredited to take more than 5 interns. Seventy percent (70%) of the supervising Biokineticists are still training interns while 30% are not. Fifty percent (50%) of supervising Biokineticists reside, and therefore work, in Gauteng and the Western Cape which endorses BASA (2013) data that these are the two provinces where most Biokinetics practices are located. At the end of the questionnaire the participants were given space to add anything they wanted to but no comments were received as to why 6 accredited practices with supervising Biokineticists were no longer taking interns. In retrospect, a direct question in regard to this topic should have been added to the questionnaire.

5.7 Summary and discussion of results supervising Biokineticists evaluating interns

The following summary of results indicates that the majority of supervising Biokineticists rated the interns as between fair and commendable in most categories. The Likert Scale responses were “unsatisfactory,” “fair,” “commendable,” and “exceptional.” However, there were some areas that

were sub-standard and rated as unsatisfactory by supervising Biokineticists. A read-through of the questionnaires found that the same supervising Biokineticists did not fill in “unsatisfactory” to all questions in every grouping of questions, thus there was no indication of response set. It is reported in the summaries if the same supervising Biokineticists, responding to specific groupings of questions in the survey, ticked “unsatisfactory.” The “unsatisfactory” results may be accounted for in the following manner, it is possible that supervising Biokineticists who found their interns “unsatisfactory” found differences in personality or differences in learning styles difficult for them to deal with and both parties (interns and supervisors) were unable to build a positive relationship. It is also possible that the interns were not sure what was expected of them and behaved in a manner consistent with their previous student status which was not appropriate for a private practice. Anecdotal evidence also suggests that Biokineticists do not have enough training in psychological aspects of dealing with different behaviour patterns (See Sub – theme 4.3: Shortfall (Biokinetics internship, page 140). There were no statistically significant differences between how male and female supervising Biokineticists evaluated their interns on the entire protocol. The proposition that accredited supervising Biokineticists are generally satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year was supported as the entire sample answered “Yes” this was true.

The entire sample found that interns they had supervised ability to learn ranged from fair to exceptional however, 10% found interns ability to seek out and utilise appropriate resources unsatisfactory the remaining 90% of the sample found interns ability in this regard ranged from fair to exceptional. In terms of taking responsibility for mistakes and learning from experience the entire sample of supervising Biokineticists rated interns between fair and commendable. Interns reading and comprehension of written material and instructions was reported to be between fair and exceptional by all participants. However, 15% of the sample found that their ability to write coherent reports using computer programmes was unsatisfactory the other 85% reported that interns ability in this regard ranged from fair to commendable. The entire sample also reported that interns they had supervised were able to work with mathematical procedures relevant to Biokinetics.

For interns listening and communication skills the following results were reported by supervising Biokineticists. Ninety percent (90%) of the sample found the interns they had supervised listened in an active and attentive manner to clients as results ranged from fair to exceptional however, 10% of supervising Biokineticists found their interns unsatisfactory in this regard. The entire sample found interns’ ability to listen to the supervising Biokineticist in an active and attentive manner ranged

between fair and commendable. Ten percent (10%) of supervising Biokineticists found their interns did not demonstrate effective verbal communication skills and were unsatisfactory, while 90% reported that their interns were between fair and exceptional in this regard.

The interns' creative and problem solving skills were rated in the following manner 20% of the sample found that the interns they supervised unsatisfactory in breaking down complex tasks or problems into manageable components while 80% rated them between fair and exceptional. A further 20% of the sample found the interns they had supervised were unsatisfactory with regard to their ability to brainstorm and develop options and ideas while 80% rated them between fair and exceptional. Interns' ability to demonstrate good analytical ability was found to be unsatisfactory by 15% of the sample and between fair and exceptional by 85% of supervising Biokineticists. The same four supervising Biokineticists ticked the unsatisfactory block for the first two questions in this section and 3 of them ticked the last question as unsatisfactory. Possible explanations are given under paragraph one of this section. Supervising Biokineticists were also asked to rate the professional and career development skills of their interns. Fifteen percent (15%) of the sample found their interns unsatisfactory in terms of their self-motivated approach to work while 85% rated their interns between fair and exceptional in this regard. The interns' ability to set appropriate priorities and goals was found to be between fair and exceptional by 90% of the sample with 19% of the sample finding their interns capability unsatisfactory in this area. Ninety percent (90%) of supervising Biokineticists found the interns they had supervised exhibit a professional attitude and behaviour however, 10% rated their interns' unsatisfactory.

In terms of interpersonal and teamwork skills 85% of supervising Biokineticists found that their interns resolved conflict in an effective manner and were rated between fair and exception and 15% found their interns unsatisfactory in this regard. Ninety percent (90%) of the sample found that their interns had supported and contributed to the teamwork ethic and 10% rated their interns as unsatisfactory. Seventy five percent (75%) of the supervising Biokineticists who responded to the questionnaire rated their interns ability to demonstrate assertive yet appropriate behaviour as fair to exceptional and 30% found that the interns were unsatisfactory in this regard. This, to an extent, supports the contention that more psychological training (for instance, inter-personal skills and assertive behaviour training) may be required (See Sub – theme 4.3: Shortfall (Biokinetics internships, page 140).

Eighty five percent (85%) of supervising Biokineticists rated their interns as fair to commendable in terms of seeking to understand and supporting the practices missions and goals while 15% found the interns unsatisfactory. Seventy five percent (75%) of the sample also rated interns' ability to fit in with the norms and expectations of the practice as commendable to exceptional while 25% found interns unsatisfactory in this respect. It was also reported that 75% of the sample rated interns' ability to work within appropriate authority and decision making channels as commendable and 25% found them unsatisfactory.

Basic work habits for instance, interns ability to report to work on time were found to be commendable to exceptional by 70% of supervising Biokineticists however, 30% found their interns unsatisfactory in this regard. Ninety percent (90%) also found the ability of interns to exhibit a positive attitude fair to exceptional while 10% found their interns to be unsatisfactory in this respect. Interns' dress and appropriate appearance for working at the organisation or practice was found fair to exceptional amongst the entire sample of supervising Biokineticists.

In terms of perceived character or personality attributes of interns the entire sample of supervising Biokineticists rated their interns' ability to display a sense of integrity between fair and exceptional. The entire sample also rated their interns' ability to understand ethical values and behave in an ethical manner as between fair and exceptional. The entire sample also rated their interns' ability to respect the diversity of their co-workers as between fair and commendable.

5.8 Adequate training of interns

Supervising Biokineticists generally found the majority of interns they had supervised were adequately trained in performing evaluations in all areas. However, 15% reported interns were not adequately trained in evaluating Healthy Individuals, 40% reported interns were not adequately trained in Cardiovascular/pulmonary evaluations, 30% reported inadequate training for interns in the Metabolic category and 30% of supervising Biokineticists reported interns inadequately trained in evaluating orthopaedic clients. The majority of the sample also found that the majority of interns were adequately equipped or trained for final phase rehabilitation to all categories on entering their internships. However, 10% reported that interns were not adequately trained in final phase rehabilitation for Healthy Individuals, 40% reported inadequate intern training in Cardiovascular/pulmonary final phase rehabilitation, 40% stated interns inadequately trained in

final phase orthopaedic rehabilitation and 45% reported inadequate intern training in final phase disability rehabilitation. These results may be due to a lack of focus on specific areas of evaluation and rehabilitation in Biokinetic Honours training (See Sub – theme 4.3: Shortfall (Biokinetics internships)).

The majority of supervising Biokineticists reported that interns were adequately equipped or trained to write patient feedback reports on entering their internships (75%) while 25% felt they were not. The majority of the sample stated that interns were not adequately equipped or trained to use ICD 10 codes for invoicing purposes however, 45% reported “Yes” they were. Ninety percent of supervising Biokineticists also reported that the intern had completed the HPCSA (PPB) required minimum number of evaluations in their internships while 10% reported they did not. This result relates to data in 5.4 paragraph 7, where Biokineticists reported that they did not complete the minimum number of guideline evaluations in their internship year. Reasons for this were given as the practice they interned specialised in a specific area thus clients in other categories were scarce or that there were too many interns in the practice. This is problematic ethically as supervising Biokineticists should ensure that interns complete guideline numbers of evaluations by allowing them to approach hospitals or other practices who deal with different types of clients. However, the response to this is that the evaluation numbers are guidelines thus interns must complete what they are able to complete. This may mean they are not competent in all categories at the end of their internship.

5.9 Discussion of qualitative results

Results from the open-ended questions, the focus group and phone interviews are discussed in an integrated manner in this section. The open-ended questions were part of the survey questionnaires for Biokineticists evaluating their Biokinetics Honours course and internship n = 47 (34 female respondents and 13 male respondents). The focus group consisted of 6 participants (4 females and 2 males) all practicing or working in Gauteng and the phone interviews consisted of 4 participants (2 males and 2 females) from the Western Cape. Only 4 (20%) of supervising Biokineticists responded to the open – ended questions on the protocol designed for them to answer. However, their responses are discussed in conjunction with Biokineticists evaluating their internship programmes responses.

Themes found in data gleaned from open - ended questions included practicals as both a positive, enjoyable part of Honours Biokinetics and internships and negative in that insufficient practical time was noted and/or not all the required minimum number of evaluations were completed by all interns. The themes and sub-themes found under, experience (Biokinetics Honours) reflects these concerns. This was echoed in a response by a supervising Biokineticist who noted that Cardiovascular/pulmonary evaluations and evaluations generally needed more work at Honours level. It was also supported by the statement made by a supervising Biokineticist in the open-ended section of their questionnaire who reported that interns do not always complete the required number of guideline evaluations if a practice has a specific focus (for instance if and orthopaedic focus the practice may not have any, or very few, metabolic clients). This is noted in the theme Challenges (Biokinetic internships), sub-theme Biokinetic internships (de-motivating encounters). This was mirrored in the theme shortfalls in Honours teaching, evaluations and practicals in the focus group themes. It is also linked to the theme ethics found in themes for the focus group as supervising Biokineticists may be aware that interns do not meet the guideline number of evaluations in specific categories. This assertion is supported by the response by a supervising Biokineticist who reported that evaluations were signed off, even though guideline numbers had not been completed. Problematically, this is unethical in terms of the regulation that interns cannot be registered until all evaluations have been completed. Another comment by a supervising Biokineticist suggested that the evaluation of the internship process should be better defined and that evaluations forms from the HPCSA (PPB) should be improved. Further, a response by another supervising Biokineticist noted that the HPCSA (PPB) and BASA do not monitor internships adequately.

Research at Honours level was seen as a positive as respondents reported they gained knowledge and skills. Theoretical knowledge gained during Honours Biokinetics was good and reported as a positive by the sample however, it was also noted that lecturers (at Honours level) and supervisors (at internship level) often have limited experience thus there is a poor transfer of knowledge. Generally, however there did appear to be a promotion of learning through a transfer of practical skills. Poor communication was a theme in the open-ended questions between both students and academics and is linked to the theme teaching in the focus group section, where problems such as outdated material were noted. Poor or bad lecturing staff and poor course delivery was also noted under the theme Biokinetic Honours (recommendations). This theme was reflected in the theme Biokinetic Honours (undesirable experiences) where phone interviewees reported poor teaching practices. The theme sink or swim, gleaned from data from open-ended questions relates to not

having enough support from supervising Biokineticists and not having proper supervision. This is mirrored under a sub-theme for Internship Experiences by the focus group who reported the same problems for instance using their own equipment to evaluate clients and being left alone to deal with clients when they felt they were not yet ready. The sub – themes Remuneration and Working hours were encapsulated within the theme Working Conditions. Generally, too little pay and too long working hours were noted as areas of concern. This was echoed under the focus group sub-themes Exploitation and Financial hardships. It is also reflected, in part, under the phone interviews theme Challenges (Biokinetics internships). A comment by a supervising Biokineticist supports these themes and sub-themes as it was noted that that interns are badly paid and often do not make a living wage. Practice Management was a theme garnered from the open – ended questions. Biokineticists evaluating their internship also noted that they were not taught practical elements of practice management such as tax and invoicing during their Biokinetics Honours or internship years. This was also reported as a gap or shortfall in both Biokinetic Honours and internship years by the focus group. The theme, Positive Social Interaction which encompassed teamwork and friendships was gleaned from responses found in the open – ended question as was the theme Mentorship which related to good experiences that interns had relating to guidance from their supervising Biokineticists during their internship year. This was echoed in responses under the theme Biokinetics (motivating encounters) in the phone interviews and the theme Internship experiences, sub theme Supervision (generally positive) in the focus group. Conversely, under the theme Internship experiences the sub them Supervision (generally negative) indicated problems with lack of supervision and poor guidance from supervising Biokineticists which links to the theme Sink or Swim under the themes for open-ended questions. The majority of participants from the open-ended questions felt that a year is long enough for an internship which was mirrored under the suggestions sub-theme Community Service in responses taken from the focus group discussions. The theme Biokinetics future, which arose out of responses to questions in the focus group, indicated that participants felt the field has a niche in South Africa. Biokineticists are also able to practice, albeit after doing bridging courses in countries like Australia and the United Kingdom. There is also the opportunity to make a good living (sub – theme of Biokinetics future) from the profession although Saturation (another theme from the focus group discussion) was noted as a problem where too many practices in urban areas are too close together and too many individuals are being trained in the field. Literature suggests that provision of internships in other fields is problematic as Schoffstall (2013) reported that more internships are needed in the hospitality industry. In the Allied health professions field Bennet (2008) reports that government demands in

the United Kingdom that increased intakes of physiotherapy students be trained at universities has led to a problem with intern placements in the country. Marketing was noted as a problem in the focus group and open-ended questions as many schoolchildren and general members of the general public and sometimes even members of the medical community do not know what Biokinetics is. This is problematic in other health related fields in South Africa for instance; Chella (2007) recommends that homeopathy be more aggressively marketed. Community Service was noted as a suggestion to improve both promoting the field in rural areas and to ensure rural communities have access to the profession by focus group participants.

5.10 Summary

The chapter discussed the results collected from both quantitative and qualitative data collected from the surveys, phone interviews and focus groups.

CHAPTER 6: METHODOLOGICAL STRENGTHS AND WEAKNESSES OF THE STUDY AND RESEARCH CONCLUSIONS AND RECOMMENDATIONS

- 6.1 Introduction
 - 6.2 Methodological weaknesses
 - 6.3 Methodological strengths
 - 6.4 Study Conclusions and recommendations
-

6.1 Introduction

The following chapter gives the overall research conclusion and gives the methodological strengths and weaknesses of the study.

6.2 Methodological weaknesses

The study did not have a random sample thus parametric statistics could not be used and thus only descriptive statistics used.

The survey sample was small, and could lack representivity, thus results should be interpreted with caution.

The issue of data saturation and population size in relation to the sample could not be properly addressed in the study as the population size could not be accurately determined as no up-to-date registration of Biokineticists could be obtained through the HPCSA and/or BASA.

6.3 Methodological strengths

The study used triangulation of methods to ensure a more holistic approach and to ensure the programme was evaluated using different lenses.

Descriptive statistics and the Chi-square test were appropriate for use in this study which used purposive samples.

6.4 Study conclusions and recommendations

Generally, quantitative results suggest that both male and female Biokineticists who took part in the research were satisfied with their Biokinetic Honours and internship years. Overall, no significant differences were found between genders in this regard. The majority of supervising Biokineticists were generally satisfied with the interns they supervised in terms of their knowledge and behaviour(s). Participants who reported problems at Honours and internship levels could have personality characteristics that are misunderstood, or use learning styles that lectures at Honours level and supervising Biokineticists at internship level are not familiar with, or display behaviours more consistent with being a student than an intern Biokineticist. Qualitative results generally underpin results from the quantitative data and while the majority of the results are positive there are some problem areas. For instance, problems relating to poor supervision, long working hours, poor pay and perceived exploitation of interns, incomplete numbers of guideline evaluations and poor teaching practices at Honours level.

The present research evaluating Biokinetics Honours and internships, using different lenses has reported both positive and negatives from existing programmes, consistent with impact evaluation. It has also noted outcomes such as long term results for instance; the fact that programmes have produced interns who become registered Biokineticists. However, short term results (students gaining Honours in Biokinetics degrees) may lead to a saturation of the market. At Honours level universities want to fill programmes with at least 30 students a year, and usually more, because of attrition (student fall out), at each year level. Thirty is the minimum number of students required for undergraduate degrees for a course to break even, from a financial standpoint. Students thus may be successful in the short term, in being selected for and gaining an Honours degree, but it seems unlikely at the present rate of training that they will all find internship placements.

Recommendations arising out of the research are, in no particular order: 1) Review Biokinetic Honours programmes at teaching institutions to ensure that module hours are appropriate and, practicals are more focused. Teaching practices should also be in-line with good educational practice (for instance, material up-dated every year and lecturing staff attend courses on how to assess or evaluate students' work); 2) The structure of Biokinetics programmes be reviewed to ensure that training is adequate, perhaps other programmes in health related fields such as physiotherapy and psychology be looked at as possible models for training; 3) Community Service be introduced as a required component after completion of internships in Biokinetics; 4) The

possibility of introducing programmes (after registration as a Biokineticist) for specialties in the field; 5) Internships should have rotations in both public and private practices to ensure that the minimum number of guideline evaluations in each category are completed; 6) Supervising Biokineticists should undergo training before they supervise interns, with an incentive being CPD points; 7) Transformation, a panel consisting of BASA and HPCSA (PPB) representatives be convened to look at how to manage cultural and gender transformation in the field. 8) Working conditions and remuneration be reviewed by another panel consisting of BASA and HPCSA (PPB) representatives; 9) A panel of academics from training institutions be convened to review selection processes at all institutions who have Biokinetic Honours programmes and 10) More aggressive marketing by BASA for instance, promotion of Biokinetics at schools and universities and through the media (print, radio and television) to educate the public and community what the field encompasses.

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Appendix 1: Definitions and regulations for the scope of practice for a Biokineticist and regulations relating to the registration of intern Biokineticists (HPCSA, 2012).

DEPARTMENT OF HEALTH

No. R.1746 14 October 1994

**THE SOUTH AFRICAN MEDICAL
AND DENTAL COUNCIL**

**REGULATIONS DEFINING THE SCOPE OF
THE PROFESSION OF BIOKINETICS**

The Minister of Health has, in terms of section 33(1) of the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), on the recommendation of the South African Medical and Dental Council, made the regulations in the Schedule.

SCHEDULE

1. In these regulations "the Act" means the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), and any expression to which a meaning has been assigned in the Act shall bear such meaning, and unless the context otherwise indicates -

"Biokinetics" means the profession concerned with preventive health care, the maintenance of physical abilities and final phase rehabilitation, by means of scientifically-based physical activity programmes;

"Biokineticist" means a person registered under article 32(1)(a) of the Act as a Biokineticist;

"scientifically-based physical activity programmes" means specific and individual-oriented physical training programmes based on the individual's physical condition and compiled and supervised;

"final phase rehabilitation" means the period or phase in the rehabilitation process in which physical activity and physical conditioning constitute the primary therapeutic modality;

2. The following acts of a Biokineticist shall, for the purposes of the Act, be deemed to be acts

DEPARTEMENT VAN GESONDHEID

No. R.1746 14 Oktober 1994

**DIE SUID-AFRIKAANSE GENEESKUNDIGE
EN TANDHEELKUNDIGE RAAD**

**REGULASIES WAT DIE OMVANG VAN DIE
BEROEP BIOKINETIKA OMSKRYF**

Die Minister van Gesondheid het, op aanbeveling van die Suid-Afrikaanse Geneeskundige en Tandheelkundige Raad, kragtens artikel 33(1) van die Wet op Geneeshere, Tandartse en Aanvullende Gesondheidsdiensberoepes, 1974 (Wet No. 56 van 1974), die regulasies in die Bylae uitgevaardig.

BYLAE

1. In hierdie regulasies beteken "die Wet" die Wet op Geneeshere, Tandartse en Aanvullende Gesondheidsdiensberoepes, 1974 (Wet No. 56 van 1974), en het enige uitdrukking waaraan 'n betekenis in die Wet geheg is daardie betekenis en, tensy uit die samehang anders blyk, beteken -

"biokinetika" die beroep wat betrokke is by voorkomende gesondheidsorg, die instandhouding van fisieke vermoëns en finale fase rehabilitasie, deur gebruikmaking van wetenskaplike gefundeerde fisieke aktiwiteitsprogramme;

"biokinetikus" 'n persoon wat kragtens artikel 32(1)(a) van die Wet as 'n biokinetikus geregistreer is;

"wetenskaplik gefundeerde fisieke aktiwiteitsprogramme" spesifieke en individueel gerigte fisieke inoefeningsprogramme op die individu se fisieke toestand gebaseer wat opgestel en waaroor toesig gehou word;

"Finale fase rehabilitasie" die tydperk of fase in die rehabilitasieproses waartydens fisieke aktiwiteite en fisieke kondisionering die primêre terapeutiese modaliteit vorm;

2. Die volgende handeling van biokineticici word vir die toepassing van die Wet geag handelinge te

that pertain especially to the profession of Biokinetics:

(1) Promotion of physical abilities, prevention of certain ailments, and physical selection:

(a) Recording of general history with a view to determining the risks of exercise (if any) for the individual.

(b) Evaluation: Physical work capacity test: Determination of physical work capacity with the aid of a cycle ergometer or treadmill, monitoring equipment and available associated equipment to arrive at and determine an effective and safe exercise level for an exercise programme prescription using the following tests:

(i) Monitoring of heart rate with an electrocardiograph or heart rate monitor during multistage workloads.

(ii) Measurements of blood pressure and other physiological responses before, during and after work.

(iii) Measurement of range of motion and muscle strength.

(iv) Evaluation of body posture and body composition.

(c) Exercise programme prescription: Prescription, follow-up of and guidance of specific exercise programmes.

(d) Physical selection: Evaluation of and exercise programme prescription for special groups and professions.

(2) Final phase rehabilitation: Musculoskeletal system:

(a) Functional ergological assessment: The assessment of the affected limb or body part to determine the functional limitations with the aid of the following:

(i) Specific history of the condition and previous treatment, and a general medical history.

(ii) Specific assessment of the affected limb or body part. This includes the manual determination of:

- range of motion;

wees wat by die beroep biokinetika tuishoort:

(1) Bevordering van fisieke vermoëns, voorkoming van bepaalde siektetoestande, en fisieke keuring:

(a) Algemene geskiedenisopname met die doel om die oefenrisiko's (indien daar is) vir die individue te bepaal.

(b) Evaluering: Fisieke werkvermoëtoets: Bepaling met behulp van 'n fietsergometer of trapmeul, monitorapparaat en beskikbare verwante apparaat ten einde vir 'n oefenprogramvoorskrif 'n effektiewe en veilige oefeningsvlak daar te stel wat bepaal word met behulp van die volgende toetse:

(i) Monitering van harttempo deur middel van 'n elektrokardiograaf of harttempomonitor tydens meervlakkige werkloadings.

(ii) Meting van bloeddruk en ander fisiologiese response voor, tydens en na arbeid.

(iii) Meting van bewegingsomvang en spierkrag.

(iv) Ontleding van liggaamshouding en -samestelling.

(c) Oefenprogramvoorskrif: Voorskryf en opvolg van en begeleiding van spesifieke oefenprogramme.

(d) Fisieke seleksie: Evaluasie en oefenprogramvoorskrif vir spesiale groepe en beroepe.

(2) Finale fase rehabilitasie: Spierskeletalestelsel:

(a) Funkzionele ergologiese evaluering: Die evaluering van die aangetaste ledemaat of liggaamsdeel om die funksionele beperkinge te bepaal met behulp van die volgende:

(i) Spesifieke geskiedenis oor die toestand en vorige behandeling sowel as 'n algemene mediese geskiedenis.

(ii) Spesifieke evaluering van die aangetaste ledemaat of liggaamsarea. Dit sluit in die handdroliese bepaling van:

- bewegingsomvang;

- muscle strength; and
- flexibility.

(iii) Analysis of posture.

(iv) Specialised tests for muscle strength, muscle exhaustion and range of motion of joints by means of the assessment of torque, muscle, work, ratios between antagonistic muscle groups with regard to torque and work, bilateral comparisons with regard to torque and work, range of motion and extent and position of restriction resulting from injury or deviation.

- Knee:	Flexion/extension:	bilateral
- Ankle:	Dorsi/plantar flexion:	bilateral
	Inversion/eversion:	bilateral
- Shoulder:	Abduction/adduction:	bilateral
	Extension/flexion:	bilateral
- Elbow:	Extension/flexion:	bilateral
- Hip:	Abduction/adduction:	bilateral
	Extension/flexion:	bilateral
- Wrist:	Extension/flexion:	bilateral
	Pronation/supination:	bilateral
- Back:	Flexion/extension:	bilateral
	Rotation	
	Lateral flexion/extension	

(b) Rehabilitation programme prescription: Orthopaedic final phase rehabilitation programme prescription. Taking the patient through rehabilitation programme prescription.

(c) Rehabilitation session: Orthopaedic final phase rehabilitation session.

(d) Rehabilitation session on specialised equipment: Final phase rehabilitation with the aid of electronic-hydraulic isokinetic systems.

(3) Final phase rehabilitation: Medical conditions:

(a) Functional assessment:

(i) General history with a view to determining the risks of exercise for the patient.

(ii) Physical work capacity test: The determination of physical work capacity with the aid of a cycle ergometer or treadmill, monitor equipment and available associated equipment to determine an effective and safe final

- spierkrag; en
- soepelheid.

(iii) Ontleding van liggaamshouding.

(iv) Gespesialiseerde toetse vir spierkrag, spieruitputtings en gewrigsbewegingsomvang deur middel van die evaluering van wringkrag, spierarbeid, verhoudings tussen antagonistiese spiergroepe ten opsigte van wringkrag en arbeid, bilaterale vergelykings ten opsigte van wringkrag en arbeid, bewegingsomvang en omvang en posisie van inkorting as gevolg van besering of afwyking.

- Knie:	Fleksie/ekstensie:	bilateraal
- Enkel:	Dorsi-/plantaarfleksie:	bilateraal
	Inversie/eversie:	bilateraal
- Skouer:	Abduksie/adduksie:	bilateraal
	Ekstensie/fleksie:	bilateraal
- Elmboog:	Ekstensie/fleksie:	bilateraal
- Heup:	Abduksie/adduksie:	bilateraal
	Ekstensie/fleksie:	bilateraal
- Gewrig:	Ekstensie/fleksie:	bilateraal
	Pronasie/supinasie:	bilateraal
- Rug:	Fleksie/ekstensie	
	Rotasie	
	Laterale fleksie/ekstensie	

(b) Rehabilitasieprogramvoorskrif: Ortopediese finale fase rehabilitasieprogramvoorskrif. Die begeleiding van die pasiënt deur die rehabilitasieprogramvoorskrif.

(c) Rehabilitasiesessie: Ortopediese finale fase rehabilitasiesessie.

(d) Rehabilitasiesessie op gespesialiseerde toerusting: Finale fase rehabilitasie met behulp van elektronies-hidroliese isokinetiese stelsels.

(3) Finale fase rehabilitasie: Mediese toestande:

(a) Funksionele evaluering:

(i) Algemene geskiedenis met die doel om die oefenrisiko's van die pasiënt te bepaal.

(ii) Fisieke werkvermoëtoets: Bepaling van fisieke werkvermoë met behulp van 'n fietsergometer of trapmeul, monitor-apparaat en beskikbare verwante apparaat ten einde 'n effektiewe en veilige oefeningsvlak vir 'n finale fase rehabilitasieprogramvoorskrif te bepaal met behulp van die volgende toetse:

phase rehabilitation programme
prescription using the following tests:

(aa) Monitoring of heart rate by means of an electrocardiograph or heart rate monitor during multistage workloads.

(bb) Measurement of blood pressure and other physiological responses before, during and after workloads.

(b) Rehabilitation programme prescription:
Final phase rehabilitation programme
prescription for specific medical conditions.

(aa) Monitoring van harttempo deur middel van 'n elektrokardiograaf of harttempomonitor tydens meervlakkige werkladings.

(bb) Meting van bloeddruk en ander fisiologiese response voor, tydens en na arbeid.

(b) Rehabilitasieprogramvoorskrif: Finale fase rehabilitasieprogram vir spesifieke mediese toestande.

The Minister of Health has, in terms of section 61(1), read with section 24 of the Health Professions Act, 1974 (Act No. 56 of 1974), and in consultation with the HPCSA, made the following regulations relating to the registration of Intern Biokineticists.

- i. Internship training shall be of not less than twelve months' duration and, where it is broken or interrupted, it shall consist of periods which, when added together, are not less than twelve months in total, including vacation leave not exceeding one month's duration per annum, and sick leave not exceeding twelve working days per annum, and shall comply with criteria laid down by the board from time to time.
- ii. If a break or interruption in internship training, excluding leave referred to in regulation 5 exceeds a period of three months, the period of internship training prior to such break or interruption shall not be recognized as part of completed internship training.
- iii. The period of twelve months of internship training referred to in regulation 5 shall be completed within a period of two years from the date of registration as an intern Biokineticist.
- iv. If an intern does not complete his or her internship training within a period of two years, his or her registration in terms of the Act shall expire, unless he or she provides the board with satisfactory reasons as to why his or her registration should be extended.
- v. The training shall be undertaken by an intern in a training facility approved by the board.
- vi. If a facility referred to in regulation 9 is not available, the board may, at its discretion, approve alternative training which in the board's opinion is equivalent to training at a facility approved by the board.

- vii. When approving alternative training in terms of regulation 10, the board may stipulate that only a portion of an intern's training shall be undertaken at that facility, and that the remainder shall be undertaken at another approved facility.
- viii. If internship training at an approved training facility is regarded by the board for any reason to be inadequate or unsatisfactory, the board may :
 - a. withdraw its approval of the facility and inform any interns at that facility accordingly in writing and advise such interns to undertake internship training at another approved training facility for the remaining period; or
 - b. in the case where internship training has already been completed by an intern, but considered inadequate or unsatisfactory by the board, extend the period of internship of such intern and require him or her to complete the extended period at another approved training facility.

Appendix 2a –Letter to Supervising Biokineticists

**University of
Zululand**

**FACULTY OF SCIENCE
DEPARTMENT OF BIOKINETICS
& SPORT SCIENCE**

Website:
<http://www.uzulu.ac.za>

Private Bag X1001,
Kwa-Dlangezwa, 3886
Tel: 035-9026386

6.8.2014

Dear Supervising Biokineticist,

I will be conducting research on Biokinetic Interns' internship year. I am seeking the opinions of Biokineticists who have completed their internships and Supervising Biokineticists). Participants must be supervising Biokineticists who have supervised an intern Biokineticist. Participants can be of any age, gender and ethnic background. Please fill in the survey handed out to you or alternatively, you can follow the link on the BASA website. All the information gathered will be treated as confidential in respect of keeping respondents names anonymous. Data obtained may be used for publication purposes at the researcher's discretion. Research will be underpinned by the ethical code of the Biokinetics Association of South Africa and the HPCSA.

Please ensure that you answer all the questions accurately and honestly. If there are any queries or concerns regarding the research please feel free to contact me on 083 237 8052 or chrisnel1@live.co.za (chris+nel+ number 1 = chrisnel1).

Yours sincerely,

Chris Nel (Biokineticist HPCSA BK No: 0019887)

Appendix 2b –Letter to Biokineticists**University of
Zululand****FACULTY OF SCIENCE
DEPARTMENT OF BIOKINETICS
& SPORT SCIENCE****Website:**
<http://www.uzulu.ac.za>Private Bag X1001,
Kwa-Dlangezwa, 3886
Tel: 035-9026386

6.8.2014

Dear Biokineticist,

I will be conducting research on Biokineticists internship year. To ensure that a holistic overview of the year is investigated I am seeking the opinions of Biokineticists (who completed their internship year and Supervising Biokineticists). Participants must be Biokineticists who have completed their internships. Participants can be of any age, gender and ethnic background. Please fill in the survey that has been handed to you or alternatively, you can follow the link on the BASA website. All the information gathered will be treated as confidential in respect of keeping respondents names anonymous. Data obtained may be used for publication purposes at the researcher's discretion. Research will be underpinned by the ethical code of the Biokinetics Association of South Africa and the HPCSA.

Please ensure that you answer all the questions accurately and honestly. If there are any queries or concerns regarding the research please feel free to contact me on 083 237 8052 or chrisnel1@live.co.za (chris+nel+ number 1 = chrisnel1).

Yours sincerely,

Chris Nel (Biokineticist HPCSA BK No: 0019887)

Appendix 3 – Informed Consent

Christopher Nel, who is a Biokinetics Master's student from the University of Zululand, has requested my participation in a research study. The Title of the research is "An evaluation of Biokinetics internships."

I have been informed that the purpose of the research is to gather data about how Interns experience their working year under a qualified and accredited Biokineticist. My participation will involve answering a non-standardised questionnaire related to aspects of my internship year. I may be requested to attend a focus group and partake in discussions related to my internship year.

There are no foreseeable risks or discomforts.

I understand that the possible benefits of my participation in the research could lead to positive changes in the internship process in the future however there is no guarantee of this. My participation will help to create awareness of the circumstances under which internships are experienced by interns. It will also help to highlight strengths and shortcomings in the internship process.

I understand that the results of the study may be published but that my name or identity will not be revealed. Only the persons directly involved in the research will have access to the confidential information and it will be stored in a secure location.

I have been advised that the research in which I will be participating does not involve more than minimal risk.

I have been informed that I will not be compensated for my participation.

I have been informed that any questions I have concerning the research study or my participation in it, before or after my consent, will be answered by Christopher. Nel, Rivonia JHB, 0832378052.

I have read the above information. The nature, demands, risks, and benefits of the project have been explained to me. I knowingly assume the risks involved and understand that I may withdraw my consent and discontinue participation at any time without penalty or loss of benefit to myself.

Subject's signature _____ Date _____

Signature of researcher _____ Date _____

Appendix 4: Survey protocol

Questionnaire 1: Biokinetics Internship Evaluation Protocol

Please answer all the sections that is Section 1, Section 2, Section 3, Section 4 and Section 5. This should take you about 10 – 15 minutes.

Section 1: Demographic Information

Instruction: Please answer the following questions: Please do not give your name to ensure confidentiality. You may give an e-mail address if you would like feedback from the final research (however, this is optional).

Age: (date/month/year)	
Gender:	
Ethnic group	
Province:	
City/Town:	
Practice Location – Is the practice you work in situated in an urban or rural area?	
E-mail address (optional):	
At which university did you complete your undergraduate degree?	
At which university did you complete your Honours degree?	
In what year did you complete your Internship training?	
In which province did you complete your internship?	
In what year did you complete your internship training?	
Would you be willing to participate in a focus group session to take place between October and December 2014?	

What is your HPCSA registration number? _____

(These will be kept strictly confidential)

Section: 2 The CEO:

This section relates to your Biokinetics Honours year course experience. The term “course” in the questions below refers to your Biokinetic Honours year of study at your university. Please tick one answer.

Question	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The staff put a lot of time into commenting on my work					
The teaching staff normally gave me helpful feedback on how I was going					
The course helped me develop my ability to work as a team member					
It was always easy to know the standard of work expected					
The teaching staff of this course motivated me to do my best work					
The course provide me with a broad overview of my field of knowledge					
The course sharpened my analytical skills					
My lecturers were extremely good at explaining things					
The teaching staff worked hard to make their subjects interesting					
The course developed my confidence to investigate new ideas					
The course developed my problem solving skills					
The staff made a real effort to understand difficulties I might be having with my work					
I usually had a clear idea of where I was going and what was expected of me in this course					
University stimulated my enthusiasm for further learning					
The course improved my skills in written communication					
I learned to apply principles from this course to new situation					
It was often hard to discover what was expected of me in this course					
I consider what I learned valuable for my future					
As a result of my course, I feel confident about tackling unfamiliar problems					
My course helped me to develop the ability to work on my own					
The staff made it clear right from the start what they expected from students					
My university experience encouraged me to value perspectives other than my own					
Overall, I was satisfied with the quality of teaching in this course					

Question	Yes	No
Overall, I was satisfied with my course experience during my Biokinetic Honours year		

Section 3: Biokineticists experience of their internship year – please tick the answer that best reflects your experience as an intern Biokineticist

Question	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I was treated in my opinion 'fairly' by my internship supervisor					
My supervisor delegated Biokinetic work effectively					
My internship supervisor delegated administrative work effectively					
My supervisor was always available to me when I had questions					
Intern Biokineticists should receive better remuneration					
I felt free to express my opinions without worrying about negative actions/responses from my employer					
Overall, the work given to me was appropriate for an intern Biokineticist					
My working conditions were good					
My supervisor provided me with adequate feedback					
I knew what was expected of me in my internship					
My supervisor/employer recognised my achievements when I did a good job					
My working hours were fair					
There is an increasing demand for Biokinetics services					
I felt adequately trained after leaving university and entering my internship					
I felt adequately trained after leaving my internship					
I received holidays but was not paid					
I received holidays and was paid during my break					
I received holidays but was not paid					
I was asked to do things that I would consider unethical in terms of ethical guidelines for the practice of Biokinetics					

Question	Yes	No
Overall, I was satisfied with my experience during my Biokinetic internship year		

Section 4: Biokinetic evaluations and auxiliary information: Please choose one of the following options in each category. Did you complete Less (than the minimum number of evaluations required in each category), Equal (the required number of minimum evaluations in each category) or More (more than the required number of minimum evaluations in each category). The minimum number of required evaluations is in brackets next to each category.

Category	Less	Equal	More
Category – Healthy Individuals			
• Healthy Individuals (50)			
Category – Individuals at risk			
• Cardiovascular/pulmonary (40)			
• Metabolic (25)			
• Orthopaedic (25)			
Category – Individuals in final phase rehabilitation			
• Cardiovascular/pulmonary (25)			
• Metabolic (15)			
• Disabled (10)			
Orthopaedic final phase rehabilitation			
Foot/ankle/lower leg (10)			
Knee/thigh (10)			
Hip (5)			
Back (10)			
Neck (5)			
Arm/hand (5)			

Please answer the following questions by ticking the appropriate block, and where necessary writing in an answer

Question	Too short	A year is long enough	Too Long
Do you feel the internship programme is?			

Please explain your answer to the abovementioned question:

Question	Yes	No
Did your supervisor let you perform any additional assessments/evaluations even though the HPCSA requirements were met		
Do you feel that a standardised “board” exam should be written at the end of your internship year?		
Are you currently practicing as a Biokineticist?		

Question	Salary	Commission	Basic salary + commission
How did you get remunerated (paid) for your internship			

Question	Less than R1500	R1500 – R2999	R3000 – R4999	R5000 – R10 000	R10 000+
On average how much did you earn per month during your internship. Please choose one answer					

Section 5: Please answer the following open-ended questions

What were the best aspects of your Biokinetic Honours course? _____

What aspects of your Biokinetics Honours course were most in need of improvement?

If you could make any change you wanted to the internship process, what improvement(s) would you make?

If you did not complete the minimum number of required evaluations please explain why

Please state what you thought were the strengths of the internship programme

Is there anything further you would like to add?

THANK YOU FOR TAKING THE TIME TO FILL IN THE SURVEY

Questionnaire 2: Supervising Biokineticists

Instruction: Please answer the following questions honestly and accurately. Your name and e-mail address will be kept strictly confidential

Section 1: Demographic Information

Instruction: Please answer the following questions: Please do not give your name to ensure confidentiality. You may give an e-mail address if you would like feedback from the final research (however, this is optional).

Age: (date/month/year)	
Gender:	
Ethnic group	
Province:	
City/Town:	
Practice Location – Is the practice you work in situated in an urban or rural area?	
E-mail address (optional):	
In what year were you first accredited to take interns?	

Question	1 – 4	5 – 9	10 – 14	15 – 20	20+
How many interns have you supervised since first accredited?					

Question	1	2	3	4	5+
How many interns are you accredited to take?					

Question	Yes	No
Are you still currently training interns?		

What is your HPCSA registration number? _____

(These will be kept strictly confidential)

Instruction: Please evaluate the Biokinetic intern(s) you have supervised since your accreditation. Note you are only required to fill in one questionnaire. If you have supervised more than one intern please evaluate the interns you have supervised from an overall perspective. If you would like to evaluate interns individually please e-mail me at: chrisnell@live.co.za and I will send you the required number of questionnaires. Please use the following rating scale.

- 1 Very unsatisfactory – never demonstrates this ability/does not meet expectations
- 2 Unsatisfactory – sometimes demonstrates this ability/ but rarely meets expectations
- 3 Fair – sometimes demonstrates this ability/meets expectations
- 4 Commendable – usually demonstrates this ability/sometimes exceeds expectations
- 5 Exceptional – always demonstrates this ability/consistently exceeds expectations

Please place a tick or cross in the appropriate block.

Ability to learn	1	2	3	4	5
Asks pertinent and purposeful questions					
Seeks out and utilised appropriate resources					
Accepts responsibility for mistakes and learns from experience					
Reads/comprehends/follows written materials/instructions					
Reads/comprehends/follows written materials instructions					
Writes coherent reports using appropriate computer programmes					
Is able to work with mathematical procedures relevant to the job					
Listening and oral communication skills					
Listens to clients in an active and attentive manner					
Listens to the supervising Biokineticist in an active and attentive manner					
Demonstrates effective verbal communication skills					
Creative thinking and problem solving skills					
Breaks down complex tasks/problems into manageable components					
Is able to brainstorm/develop options and ideas					
Demonstrates good analytical capacity					
Professional and career development skills					
Exhibits a self-motivated approach to work					
Demonstrates the ability to set appropriate priorities/goals					
Exhibits professional behaviour and attitude					

Interpersonal and teamwork skills					
Manages and resolves conflict in an effective manner					
Supports and contributes to a team work ethic					
Demonstrates assertive yet appropriate behaviour					
Organisation/Practice effectiveness skills					
Seeks to understand and support the organisation/practice's mission/goals					
Fits in with the norms and expectations of the organisation/practice					
Works within appropriate authority and decision making channels					
Basic work habits					
Reports to work as scheduled and on time					
Exhibits a positive and constructive attitude					
Dress and appearance are appropriate for the organisation/practice					
Perceived character (personality) attributes					
Brings a sense of value and integrity to the job					
Understands ethical values and behaves in an ethical manner					
Respects the diversity of co-workers					
On entering his/her internship year, do you feel the intern was adequately equipped/trained evaluate the following patients.	Yes	No			
Healthy individuals					
Cardiovascular/Pulmonary					
Metabolic					
Orthopaedic					
On entering his/her internship year, do you feel the intern was adequately equipped/ to prescribe final phase rehabilitation programmes to the following patients.					
Healthy individuals					
Cardiovascular/pulmonary					
Metabolic					
Disabled					
Orthopaedic					

Question	Yes	No
On entering his/her internship year, do you feel the intern was adequately equipped/trained to write patient feedback reports		
Use ICD 10 codes for invoicing purposes		

Question	Yes	Unsure	No
Did the intern complete the HPCSA minimum number of required evaluations in their internship?			

Question	Yes	No
Generally, I was satisfied with the theoretical and practical knowledge that intern Biokineticists demonstrate during their internship year		

Do you have any further comments (or suggestions) you would like to add?

Thank you for taking the time to complete the questionnaire

Appendix 5: Transcript and colour coding of open-ended questions

1: Transcript of questions = Biokineticists evaluating their internships.

a) Not all respondents made responses to all the open-ended questions b) All responses made are recorded however, when responses are not made no indication is given other than the lack of the respondents number (Respondent 1,2, etc.). c) The surveys were numbered in an arbitrary manner thus respondents are given that arbitrary number and not identified (maintaining confidentiality).

Question: What were the best aspects of your Biokinetics Honours course?

The response rate to this question was = 76.59%

Respondent 1: Working with sporting teams and sports injuries. Rotating through different practices and working with new equipment and patients as well as giving classes (aerobics, Pilates).

Respondent 2: Theory was good so knowledge gained. The practical application and exposure at a variety of practices. Learning research techniques was great.

Respondent 3: That it was practically orientated.

Respondent 4: Working with patients and having hands-on experience and working with Maties rugby.

Respondent 5: The practical application and clinical decision making (this was a breath of fresh air after three years of arbitrary theory work).

Respondent 8: Mostly the practical classes as I got a better understanding about the course.

Respondent 9: The research project when we looked at a topic we were interested in and sports injuries module.

Respondent 10: Orthopaedics and clinical [practical work]

Respondent 12: Learning to prioritize time around my studies and work.

Respondent 13: Statistics and research courses within the Honours programme.

- Respondent 15: The Biokinetics courses within our Honours programme were the best.
- Respondent 16: Practical experience.
- Respondent 17: I was privileged to sit in Prof Gert Strydom;s (the “Father of Biokinetics”) class.
- Respondent 19: To apply theory into practical understanding and learning.
- Respondent 20: Practical rotations, to see how a practice runs not just the theory behind it.
- Respondent 22: Good standards of education and knowledge supplied.
- Respondent 24: Very good practical side from certain lecturers.
- Respondent 25: Teamwork, great friends all in the same boat!
- Respondent 26: Practical learning and learning from practicing Biokineticists.
- Respondent 28: The most challenging year ever, even now I find that many years later thinking about how the year not only improved my learning and thinking and how to challenge ideas but taught me strength of character.
- Respondent 31: Practically applied and covered all aspects of orthopaedic, chronic, pulmonary and so forth hence holistic.
- Respondent 32: The ability to learn skills and practice my own.
- Respondent 33: Further learning opportunities and great discussions.
- Respondent 35: Learning to work in a group was a good experience.
- Respondent 36: I studied with a group of really interesting and good people who became friends. We were exposed to a number of interesting practises and were able to watch an open-heart surgery at a hospital.
- Respondent 37: Orthopaedics, exercise physiology and sport psychology.
- Respondent 38: The amount of rotations and variety of practices we went to as well as being able to watch surgeries.

Respondent 39: The practical sessions and the research article we had to complete as we learnt a lot through research.

Respondent 40: Wide spectrum of new knowledge and practical training.

Respondent 41: Working for experience in lots of different places.

Respondent 43: Research studies, this helped our understanding a lot and practical experience.

Respondent 45: The practical experience we were exposed to and the knowledge we gained from our lecturers.

Respondent 46: Some of the lecturers teaching and practical experience and rotations.

Question: What aspects of your Biokinetics Honours course were most in need of improvement?

The response rate to this question = 97.87%

Respondent 1: Less focus on activities that are not relevant but are used to keep you busy. Cramming everything into 1 year, more practical work required.

Respondent 2: 1) First Aid hours, wasted time, we were far more people at the course than officials needed. We could have used the time for practical application of our actual field. 2) Exposure to practical management, ICD 10 codes and procedure codes.

Respondent 3: Lecturing staff had little experience of teaching so we didn't get that much knowledge and more of the actual practising as a Biokineticist must be incorporated.

Respondent 4: More focus on anatomy and practice management is needed to be incorporated in the course.

Respondent 5: Emphasis on knowledge of appropriate exercise techniques particularly for individuals who are more theoretically inclined without broad experience in exercise and its application. That is some lecturers have not practiced and don't seem to be very practical.

Respondent 6: **Practical experience!**

Respondent 8: **External visits to the practices for shadowing – these were not monitored properly.**

Respondent 9: **Poor lecturing and lecture delivery we had to get knowledge from books which was difficult.**

Respondent 10: **Overall Health and Wellness and Biokinetics practice.**

Respondent 12: **Practical evaluations.**

Respondent 13: **More time for all information and knowledge, one year is too short.**

Respondent 14: **Better time management. I felt we were always pushed for time.**

Respondent 15: **More practicals and time with patients.**

Respondent 16: **We needed more on practice management and financial education.**

Respondent 17: **Practical.**

Respondent 18: **The practical aspect.**

Respondent 19: **More variety of subjects and more practical work.**

Respondent 20: **Lecturers inability to talk to Honours students and the HOD of the department needs to be more “hands on.**

Respondent 23: **Clinical.**

Respondent 24: **Better communication and course outlines from lecturers.**

Respondent 25: **A lot more practical application is required as I did not finish all the evaluations in my internship year.**

Respondent 26: **Better pre-knowledge of anatomy and biomechanics when starting Honours. More Broader Balance training.**

Respondent 29: **Practical hours (need more).**

Respondent 31: **To move into phase 3 to 5 rehabilitation. To observe someone from phase 1 to final phase rehabilitation.**

Respondent 32: **The communication very bad and if we asked about things like research we were told to read a textbook.**

Respondent 33: **More up-to-date notes in the coursework.**

Respondent 35: **Ethics in Biokinetics, ICD 10 codes, tariff codes and real world situations.**

Respondent 36: **The communication in the departments to students could have been a lot better most of the time the class felt unsure about [how to do] tasks given.**

Respondent 37: **More practical teach students to analyse the Kinetic chain, encouragement to think laterally, "out of the box." My course was too much "parrot fashion and regurgitation." Also more foundation on orthopaedic rehabilitation and education on management of patients with chronic disease.**

Respondent 38: **Communication with assignments, billing and coding and ethics in a practical sense.**

Respondent 39: **The anatomy modules and lecturers needed more focus and detail. More lectures on practice management and ownership as well as information on medical aids, RX codes, ICD 10 codes, etc. Aspects pertaining to real life running of practices and the profession.**

Respondent 40: **Assignment instructions and guidance and teaching time-management.**

Respondent 41: **Need more hands on patient experience.**

Respondent 43: **Practical application to practice.**

Respondent 44: **Practical application during Honours into practice didn't flow.**

Respondent 45: **The timeframe was too short.** There was too much knowledge to cover in one year.

Respondent 46: **Quality and depth of lectures overall. Focus more on skills needed in working environment. We had no experience with ICD 10 codes.**

Respondent 47: **Practice management and business skills.**

Question: If you could make any change you wanted to the internship process, what improvement would you make?

The response rate to this question = 65.95%

Respondent 1: **Working normal working hours not early in the morning and late at night (7.30am 0 4.30pm).** How to operate a practice.

Respondent 2: **I was properly guided so no problems** but I didn't know anything about how to start and conduct a practice.

Respondent 3: **I was very fortunate in my internship year and wouldn't really change anything...**The payment could be better but I suppose I was paid fairly in terms of the practice clientele numbers.

Respondent 4: **Teach interns about running a practice for instance, tax. Also if the Biokineticist wants you to work extra hours they should give you increased pay.**

Respondent 5: **I would improve it by having an external body designate internship positions for the intern instead of it being mostly application based. I think Community Services should be introduced like for physiotherapists.**

Respondent 6: **I would like to do more practical work with patients during my studies not just my internship.**

Respondent 8: 1) **More input by the supervisor as I didn't think I gained enough knowledge in my internship year** 2) **Increase the remuneration as there is a lot of work.**

Respondent 9: **More clinical and orthopaedic exposure.**

Respondent 10: **More pay.**

Respondent 12: **None.**

Respondent 14: **Nothing.**

Respondent 15: **Hmm, it was a well-rounded internship.**

Respondent 17: **The improvements I wanted to see were made when I did my internship.**

Respondent 18: Students not given enough time for all the work.

Respondent 19: **Expand working environment.**

Respondent 20: **The supervisors of interns need to be accredited in a way that means they need to have the same standard every year.**

Respondent 22: **Better guidance and feedback as communication where I did my internship was very bad.**

Respondent 23: **The internship could be better if more rotations and hospitals included for everyone.**

Respondent 24: **Add community service after internship. The internship should be done through the public sector and not in private practice.**

Respondent 25: **You just get thrown into the deep end, maybe more learning time with the bio and client.**

Respondent 26: **Have a better understanding of administrative work (ICD 10 codes and treatment codes etc.).**

Respondent 30: **Provide more practical support in terms of mentorship. In my internship year the senior Bio left in June and we were expected to complete our internship without a senior Bio.**

Respondent 31: **Again, phase 1 – 5 is reviewed practically (rehabilitation).**

Respondent 35: **More practical learning rather than “money” driven.**

Respondent 36: **Fairer working hours and not seeing so many patients in a day.**

Respondent 37: **Better supervision and teaching, not just an under-paid employee doing all that the qualified Bios were doing.**

Respondent 38: **Stricter working hours (not so long) and increased communication between Bios and interns.**

Respondent 39: **Normal working hours, lunch breaks, more experience to a variety of conditions to work with, increase in salaries for interns.**

Respondent 41: **Give interns more freedom with patients and provide feedback after for support. They just leave you to yourself.**

Respondent 45: **Get better knowledge on invoicing and ICD 10 coding.**

Respondent 46: **Increase remuneration – we received R2, 500 per month which is not near enough to cover rent, food and petrol. As a result I had to take on extra jobs to cover expenses in addition to completing my Masters.**

Question: If you did not complete the required minimum number of evaluations please state why?

The response rate to this question = 63.33%

Respondent 8: No, all evaluations were not completed because no patients came in with knee/thigh foot/ankle and back injuries or only a limited number.

Respondent 9: Did not complete all evaluations because of the practice setting (Disabled, orthopaedic generally Neck and arm/hand).

Respondent 14: The practice I was at did not focus on those populations (Metabolic and arm/hand).

Respondent 18: No, not enough patients in the disabled category.

Respondent 22: Did not have exposure to disabled and arm/hand clients.

Respondent 26: No, not enough cardiovascular/pulmonary patients and not enough metabolic patients.

Respondent 31: No, too many interns and not enough clients (Cardiovascular/pulmonary, metabolic, disabled, neck and arm/hand).

Respondent 32: No patients in those categories in the quantities required (cardiovascular/pulmonary, disabled, neck and arm/hand).

Respondent 35: No, different practices have different scopes (orthopaedic generally and arm/hand).

Respondent 36: No. Those types of evaluations did not come into our practice a lot. Our practice mostly had orthopaedic patients with a few chronic disease patients and quite a few neurological patients (cardiovascular/pulmonary, metabolic, arm/hand).

Respondent 37: No, because the Biokinetic practice focused on chronic disease management (cardiovascular/pulmonary, disabled, knee/thigh, arm/hand).

Respondent 39: No, not enough due to long working hours and no access to these patients due to the practice being focused on or seeing more orthopaedic conditions in general (metabolic, cardiovascular/pulmonary)

Respondent 40: No, more of an orthopaedic practice and not so much of a chronic disease practice (disabled, metabolic).

Respondent 45: No, I wasn't in a practice that specialised in those areas (metabolic, disabled).

Respondent 46: No, not enough intake to cover 6 interns we had to spread evaluations over all equally (disabled, foot/ankle/l back, neck, arm/hand).

Question: Please state what you thought were the strengths of the internship programme and why?

The response rate to this question = 61.70%

Respondent 1: Seeing a large variety of people.

Respondent 2: Wide scope of practice.

Respondent 3: My employer was a good guide but gave me the space to think for myself. She was very ethical and a great example. She could think out of the box and encouraged me to do the same.

Respondent 4: The best strength for me was working with different types of patients like older patients, disabled patients and those with problem hips.

Respondent 5: It was a broad experience rather than a narrow, specific experience.

Respondent 6: **The Bio I worked for! She was excellent and helped a lot.**

Respondent 8: **More exposure to actual patients prepares you for the real world.**

Respondent 10: **Good platform to properly assess patients and treat them.**

Respondent 12: **The Biokineticist exposed me to the work and still gave me guidance.**

Respondent 13: **With practical work – you learn.**

Respondent 14: **Saw a variety of different injuries.**

Respondent 15: **Doing mine at varsity was excellent as I was able to learn through training the next year coming up and learning from the Bios.**

Respondent 18: **Good mentorship and given responsibility.**

Respondent 19: **Good training and good overall exposure.**

Respondent 21: **Scope of tasks assigned is for every aspect of Biokinetics.**

Respondent 22: **Sink or swim!**

Respondent 25: **A friendly environment and a good teacher.**

Respondent 28: **Being at an institution like SSISA in the medical practice and healthy weight programme exposed me to a professional institution with highly skilled mentors and exposure to a variety of areas and good mentorship.**

Respondent 31: **Practical and holistic.**

Respondent 32: **Learning, motivation, confidence and exposure to clients but still in a protected environment with teamwork.**

Respondent 33: **Exposed to an integrated multidisciplinary medical practice through SSISA and motivated by the supervising Bios.**

Respondent 35: **Real world learning. Learning to be part of a team.**

Respondent 36: **It taught me to multi-task a lot and I grew as a person. It gave me a chance to gain the practical experience that lacked from the Honours programme. I gained more confidence to work with my own patients as a qualified Biokineticist.**

Respondent 38: I got more experience and knowledge than I ever thought possible.

Respondent 39: Good experience gained, good friendships built and networking for future support.

Respondent 40: Exposure too many new conditions; confidence in treating patients; learning and understanding practice management and keeping patient satisfaction high.

Respondent 41: Experienced a variety of cases. Good friendships and teamwork.

Respondent 45: Being exposed to a variety of different patients.

Respondent 46: Exposure to large variation of rehabilitation conditions including cardiac, Parkinson's, TBI, etc.

Question: Do you feel that the internship programme is too long, a year is long enough, too short. Please explain your answer.

The response rate to this question = 46.80%

Respondent 1: I felt that the honours year should be more practical possibly extending the year slightly so it moves into internship.

Respondent 3: A year is long enough if you have the right employer then she/he she has enough time to teach you what you need to know in a year.

Respondent 4: A year is long enough because CPD's allow Biokineticists to continue with their training.

Respondent 8: A year is long enough because you just put what you learnt in honours level in practice.

Respondent 14: A year is long enough because you cover enough during Honours.

Respondent 15: A year is long enough because I was able to grow sufficiently to put my theory knowledge into practice.

Respondent 18: A year is long enough as I could only just survive financially.

Respondent 20: *A year is too short. I think internships should be +-18 months.*

Respondent 21: **A year is too long for obvious reasons [obvious reasons not given]**

Respondent 22: **Community service should be added to internships for the exposure to get you, as the therapist, and the general public more aware.**

Respondent 25: *Too short. University for bio was only 1 year which was more theory. Possibly more time for shadowing and practical learning.*

Respondent 26: **A year is long enough time to learn how to be an independent practitioner.**

Respondent 31: **A year is long enough but after a year there should be a specialisation (if the person wants to).**

Respondent 33: **A year is long enough but I think the Honours course should be 2 years.**

Respondent 35: **A year is long enough provided the Bio has appropriate teaching methods and knowledge.**

Respondent 36: **A year is long enough however, it depends on the practice that you work in and on how much you are exposed to patients in your internship.**

Respondent 37: **A year is long enough if education, application and lateral thinking is in the foundation phase of the year with that as a focus, rather than cheap manual labour to be taken advantage of.**

Respondent 38: **A year is long enough, depending on the practice. You need to see enough patients and experience what is necessary.**

Respondent 39: **A year is long enough. The workload would be too much to handle in a short period but also would be too much to cope with any longer than a year with regards to burnout.**

Respondent 40: **A year is long enough. It is enough time to gain valuable experience in all fields. More than a year as an intern in a private practice, being supervised by one person, would be too long.**

Respondent 43: *A year is too short because learning application of Honours work needs to be integrated earlier.*

Respondent 46: *A year is too short. Too much gets crammed into one year it feels rushed to learn the sheer volume of knowledge.*

Question: Are you currently practising as a Biokineticist? Yes, No – If no please explain why not?

The response rate was low because only those respondents not practicing as a Biokineticist answered thus the response rate is also the % of those not practicing = 8.51%

Respondent 24: No - I was offered a job outside of Biokinetics but still with Health and Wellness that appealed to me. I found it incredibly difficult with medical aids and payment structures in the Bio practice.

Respondent 28: No – I work in the corporate sector as a product developer for Virgin Active – still using Biokinetics knowledge though.

Respondent 30: No, working as academic support staff at a university.

Respondent 31: No, I lecture and do research.

Question: Is there anything further you would like to add?

The response rate to this question = 27.65%

Respondent 4: **Biokineticists should spend more one-on-one time with their interns. Too many Bio's just have interns to run their practices without teaching them anything.**

Respondent 6: **I have gained the most knowledge in my internship. BASA and HPCSA must do something about the poor pay for us when we are interns.**

Respondent 9: **I hope this research aids in promoting Biokinetics in the public health sector. All the best :-**

Respondent 10: I managed to work with a wide population and learned what I needed to know for the future.

Respondent 19: BASA is doing a great job with marketing and assisting with Biokinetics and its practice.

Respondent 22: I feel that a standardised Board exam should not be written as each internship and academic programme is so vastly different. If programmes all through were standardised then, yes a Board exam could be written.

Respondent 31: The questionnaire is at times too generalised. A focus group or interview may be needed to probe further.

Respondent 33: Everyone's internship year is different due to different practice types therefore exposure to all categories (minimum standards) is not always available. Students that rotate need to learn how to be more involved and interactive playing "angry birds" on a cell phone doesn't contribute to biomechanical postural analysis effectively!

Respondent 35: Add community service and a Board exam should be written at the end of the internship.

Respondent 37: A practical Board exam should be written at the end of the internship year.

Respondent 39: Very good survey you are performing as your internship is a very important year but very difficult regarding workload, working hours, pay, etc. This puts a lot of people off being a Bio when they complete this year due to Burn-out and not being able to afford things.

Respondent 40: Interns should not be exploited in general, pertaining to the hours worked and salary earned. The amount of internships available should be looked at as there are not enough available for the number of interns that there are.

Respondent 46: I feel a Board exam should be written at the end of the internship. I also think that the oral exam that we take at universities is equally important and this should be standardised.

2. Transcript of questions = Supervising Biokineticists

a) Not all respondents made responses to all the open-ended questions b) All responses made are recorded however, when responses are not made no indication is given other than the lack of the respondents number (Respondent 1,2, etc.). c) The surveys were numbered in an arbitrary manner thus respondents are given that arbitrary number and not identified (maintaining confidentiality). d) To ensure no confusion with the Biokineticists evaluating their internship year responses an S was placed before the word Respondent = S. Respondent 1, etc.

Question 1: Did the intern complete the HPCSA guideline number of evaluations in their internship – any comments related to this question.

The response rate to this questions = 10%

S.Respondent 7: There should be more work on cardiovascular during the Honours year and more work on evaluations generally.

S.Respondent 18: No, they did not as the practice does not have the clientele for some of the categories. We signed off though as do most practices even though they might not admit to it.

Question 2: Do you have any further comments (or suggestions).

The response rate to this question = 10%

S.Respondent 4: The evaluation process of the interns should be more thoroughly defined. The universities should monitor the private practice internship process. They should receive progress reports on a quarterly basis and have access to a portfolio of evidence (from the practice). Evaluations should be performed quarterly. The evaluation forms should be more specific.

S. Respondent 18: The universities, BASA and the HPCSA do not monitor internships adequately. Interns are poorly paid by most practices and do not make a living wage they are also often left to their own devices. Much more effort should be made by BASA through the HPCSA to have internships of at least 6 months in the public sector followed by 6 months in

private practices. A Community Service year should also be introduced to allow interns to experience different aspects of the community. Most Biokineticists and interns are predominately White – this should to change.

Appendix 6: Transcript and colour coding for focus group discussion

Information: Participants drew a number from 1 – 6 and are identified by that number in the transcript. The colour coding represents a specific theme which is identified under 5.2 Presentation of themes in the text. The focus group was recorded and immediately thereafter transcribed by the researcher.

The questions for the focus group were decided on by reading responses to the open-ended questions in the questionnaire and a perusal of the literature relating to internships in the health-sciences. The questions were quite broad which allowed participants to answer freely. A few general questions were asked first to ensure the group was comfortable before asking more specific questions pertaining to internships and the academic Honours year. The researcher was able to probe responses if clarity was needed.

QUESTION: Generally how do you feel about the field of Biokinetics?

1 – It is interesting and only a field in South Africa. I have had a look at options in Australia you have Exercise physiologists, so it's sort of similar but you would have to write exams to get into it.

6 – You can also become an exercise physiologist if you do the necessary conversion or Lab technician work in England one of my friends did that were you do ECG's and things.

QUESTION: Is there enough work in this country for Biokineticists?

1 – There is bit I think that it is getting quite saturated. If you look in this area (Sandton) it's ridiculous. I think BASA or the Health Professions Council need to enforce the rule of radius in terms of practice locations.

QUESTION: Isn't the rule enforced?

1 – No if you look here [Johannesburg] they don't do it.

QUESTION: What is the Rule?

2 - Not sure exactly what the distances are but if someone starts a practice it must not be within a certain radius but they are very close here in Joburg [Johannesburg] and new practices seem always to be starting or new Bios come into an existing practice and they need to get clients.”

5 - No the rule is that if you leave a certain practice you may not start up a new practice within a 5 or 10km radius. I’m not sure what the exact distances are according to the rule. I don’t think there is any rule about where a new person can start a practice.

4 - It is true that some of the best areas are quite saturated in Johannesburg and probably Cape Town.

QUESTION: If this area is saturated and you practice here can you make a good living?

1 - Its good if you are in the right place not too close to a popular practice. Or you are in the popular practice or gym.

2 - It is limited to your area because in Johannesburg you will earn a lot more than in Pretoria. As a qualified Biokineticist I was earning R4000 per month.

5 -I think that you have to work for yourself to make it work and it depends on your referral systems. If you have a lot of clients coming in its fine but it does just depend on the month. It’s one of those situations sometimes...but too many practices in an area doesn’t help.

3 - That’s right - sometimes especially in December and January it can be a problem.[Question: Why is that?] A lot of people go away even doctors and clients take a break from their rehabilitation cos of Christmas and that. In South Africa December is a break from everything.

QUESTION: Do you feel the profession of Biokinetics has a future?

4 - I Do. I think that there is a niche for our career. One of the Biokineticists that I worked with previously went to Australia. She did her 6 month internship in Australia and she

worked for a top sports centre that side. I know that some that the Physiotherapists in Australia tend to cover Biokineticists in their scope and he was saying to her that when he was exposed to Biokinetics from a South African perspective and he was actually quite shocked at how much knowledge we had and what we can offer and he was like our field he wishes they could offer that there and I don't think that Physiotherapist or hand on therapists can cover everything on their own.

6 - That's interesting. So there is a gap for practice overseas if you do the bridging course? I would also like to say that the profession needs schools to promote it as most school kids have never heard of it.

4 - Yeah, that's true. The profession has a future I would say as you can't expect a personal trainer to do clinical rehab and they can't use ICD 10 codes and that's where I think there is a big gap.

QUESTION: What major challenges, did you experience during your internship year?

3 - I didn't have any supervision. I was left alone at the Practice doing my own thing and there was a lot of financial stress that year.

QUESTION: Did you earn a living wage?

3 - I earned hardly anything - I received R3000 which wasn't enough to live on. My parents had to help out. I didn't live very well and struggled to buy food. I shared a room in a flat with someone so that's how I could survive.

QUESTION: Is there a minimum and maximum earning recommendation and are they adhered to in your experience? (Sidebar - the minimum wage recommendation is R3 000)

4 - There is a minimum I think that it's about R 1500 a month.

6 - **There is no maximum recommendation but from everyone I have spoken to wages are usually very bad very few people even now earn more than R5000 a month.**

3 - **No there don't seem to be any minimum or maximum rules for pay.**

4. **Not as far as I know.**

3 - **I think a lot of practices think that they are doing you a favour by taking you as an intern.**

4 - **They exploit you basically for money and work.**

1 - **They know you have to do an internship so you have to take it wherever you can get it. There are so many people applying that you have to just take what you get and work. I only got R4000 you just have to take it and suck it up and get through it.**

2 - **For me the money was a real problem I also only got R4000 month. The other thing I think if you look at it, for me, is the academic. When I got in and you have to do the practical things, even though the university I was at is more practically orientated they focus too much on the little unimportant things and not enough on the practical side of it.**

1 - **It's the same at all universities from what I hear. They do a lot of theory but not enough practical especially rehabilitation.**

QUESTION: Does anyone else want to say anything about their Honours year in this regard?

1 - **I think it's only a year because you do a 3 year human movement science degree which gives you background then it's only a year when you do Honours. It's too much too quickly it's all squashed in theory and practical together. There isn't enough practical.**

3 - **Theory and practical are at the same time so usually practical suffers.**

4 - **I agree with that.**

5 - **Me also.**

QUESTION: So what I am hearing from you is that you think Biokinetics Honours could be structured better?

4 - I think Biokinetics has to be more focused because anyone can do human movement science for 3 years. If you're doing Biokinetics it should be more focused on Biokinetics. I am going to be honest with you, when I entered my internship year and they ask you to give exercises for a back injury you don't actually know what to do because they don't teach you different types of exercises in your Hons year.

2 - Yes, it is true; you don't know what to do.

1. You know the muscles and why it's sore but not specifically what exercises to do to rehabilitate your patient.

5 - Ya, no definitely. It's also like any when you are with people do you get that when you go into your internship you don't know what to do. Physios they know because they practice with each other from year 1, so by the time they get to their clients they are comfortable with it. But you are just kinda thrown into this [internship] from Honours because you do a lot of theory and you haven't covered a lot of practicals. You haven't seen enough people so you don't know how to handle them. You don't look confident which makes you look like you don't know what you are doing. But in the meantime you actually don't know what you are doing. It's also bad for your confidence.

6 - I think that the programme is structured in that way. The internship year forms part of your training so you do your Honours year where you do your 500 practical hours and the internship year is supposed to supplement the process. So that year is actually dedicated to you to go out into the practice and learn to get the knowledge to then qualify as a Biokineticist. It is true that a lot of things that are covered aren't relevant. But where I think the shortfall is that the supervisors are not paying enough attention or training the interns. The shortfall is with the accredited practices and the supervisors who should maybe be monitoring that progress before the person is thrown into the deep end. I think there is no focus from anyone to say what supervisors must do with the interns. The intern gets there and they put you to work, sink or swim sort of thing.

QUESTION: So do you feel you have had enough practical experience with clients at Honours level?

5- For us at varsity we did Thursday and Friday where we went to observe at a practice but we didn't do anything we just sat and watched. We did this for a month each at different practices. But also if you think of a Bios schedule technically on Thursday and Friday you are seeing the same people, because it's the same schedule. But even those Bios you are watching get irritated because you are in their space during the session. Even the client seems irritated, they are like Ok they are here again....you know it's not comfortable; we end up sitting there in a corner. Sometimes I'm not sure it's even ethical.

6- I agree but it is ethical cos the client has to be asked for consent before interns watch.

3- Ya but Bios know their clients. They usually make sure that they don't watch two of the same sessions because the more they are there the more uncomfortable it is for the client so I don't think it's unethical.

1 - We didn't get enough practicals at Honours as there were a lot of us. We didn't even watch Bios regularly. So we didn't deal a lot with people. I know that now I find it a problem because I get divorced clients who just want to tell me everything or those with sick wives or husbands. It gets too much sometimes.

QUESTION: Now you are talking about psychology. You are dealing with people every day. Was psychology covered in your Honours year?

5 - I did sports psychology in my three year degree and am doing Honours in psychology now through UNISA. We didn't cover any psychology in Honours in Biokinetics though.

2- I did pre-grad sports psychology for sports teams but not really enough practical for what we do in basic psychology.

3 - I did the same as 2 and agree with that.

1 - I did an Honours in Industrial Psychology because I did psychology 1, 2 and 3 in my degree so I did a lot of theory the problem is the practical side. We didn't learn how to counsel people or anything like that.

6 - I also did Industrial Psychology as a second major and also did Honours in Industrial Psychology but we didn't do any practicals in counselling for clients so I know some theory but not the practice.

1 - We covered quite a bit of organisational behaviour [study of people in the workplace]. It was a major subject, but it doesn't do anything to prepare you for a patient that's just got divorced for example.

6- I think what we are trying to say is that it is all theory and not practical or applied and we need more practical application of psychology and more focus on rehabilitation at Honours level. We also didn't cover the basic aspects practice management [probe, Such as?]. Well thinks like billing and ICD 10 codes and I guarantee you no one has any idea about tax and provisional tax and things like that.

4 - Yes, that's correct.

QUESTION: So do you feel that the theory you learned at Honours is difficult to apply in the practical sense if you have not had enough practical exposure at that level?

6 - Exactly, how do you modify or adapt theory when you sit someone down and talk about changing their behaviour and incorporating that into your rehabilitation plan.

1,2,3,4 and 5 - Nodded their heads and/or verbally said "Yes" they agree.

QUESTION: Do you refer clients with psychological problems to psychologists?

1 - 5 responded "No."

6 - It is something we didn't cover - we refer to physios and medics but no one mentions psychologists.

QUESTION: Well how do you rehabilitate your clients?

3 - We do it physically we don't take anything else into account.

1,2,4,5 and 6 – All nodded.

QUESTION: So let me understand in your training was the physical and psychological seen as different elements?

4. I think you just have to take it as it comes but yes.

5: You can recognise patterns that people go through especially like weight loss for example so you can kind of like gauge and see what they are going through. We didn't look at the two as being integrated I suppose it's a gap in the training.

1 – The client I have that has just got divorced makes it difficult for me. He brings all that stress onto you because you want to exercise him and he wants to talk about his divorce. It's the same for all the divorced guys, so all their problems get thrown onto you. It is also hard dealing with other people's problems because they are unloading onto you and you just have to bat it off and keep doing what you doing. If we had done more psychology, like practicals in it, it would have helped.

6 – Yes, it is like that.

QUESTION: So were you taught how to de-brief psychologically yourself and deal with transference in your programme.

1 -Ya a little bit.

6 – No, not really. Can you explain what that means?

Explanation: Transference was explained as when you have a client with a similar problem to anything you might have experienced you may take on the problems and relate to yourself.

5– I think that would help us a lot if we had to cover that in our learning programme at Honours. We would be able to deal with patients a lot better. Some people maybe don't necessarily have the people skills and this will help them clear their minds. Ya, we would just learn how to deal with those patients in a better way.

QUESTION: Let us move on. Now I am going to ask you how did you experience your supervisors.

1 – Mine was very hands off and didn't really teach me anything. It was a case of just learn it yourself. Um...here is a client; here is what I think you should go do or do whatever necessary.

QUESTION: Can you clarify, was the client charged for this?

1 – Yes. Also my supervisor didn't let me do any of the assessments myself I would always just sit in on assessments. He would do the assessment and I would watch and then I would have to take the client after that. I would have maybe done things differently in the assessment, and tried to get a bit more out of it. He never got enough medical history in my opinion..... and then all of a sudden I have to exercise the client having not done the assessment myself.

2 – My lady was very hands on and treated me very well. I had a very nice lady that went through everything with me. She was very to the book with everything. I enjoyed her. She taught me most of the stuff that I thought that we should have learned in the 4 years before going there, especially in the Honours year.

3- If I saw my supervisor more than once per month it was a lot. So I did everything from day one. I did all my own evaluations right through. I don't know if I messed up or not. Luckily in the year that I was there no one came back. So Ya, I don't have any good things to say about my supervisor that I had. I had a very negative experience I had to work 12hours everyday alone just me running the gym. That is probably one of the reasons why I don't actually practice today.

4 – My internship was quite good although I think where there is shortfall with the internships as well because I think that there is a rule that says an intern can only see patients on their own after a period of 6 months of working with their supervisors. I can guarantee you that half the supervisors or more working out there speak to you for a month and observe you with patients doing assessments and then after that you get thrown in the deep end. That, I think, is a shortfall. I don't think that it is right that we are thrown to do 8-12 hours of work a

day just to exploit our expertise if you want to call it that....um, you know just for the benefit of them having a cheaper employee.

2- **Yes, that is what they are most interested in is not teaching you just making money off the intern.**

4- **That's exactly what internships are about making money for your boss!**

5- **Mine was the same I didn't have proper hands on supervision. Um... It has a lot to do with the culture within a practice or a gym. I would be sent to fetch coffee or go and buy this and that of a personal nature for my supervisor.**

6- **I didn't have too bad a time but I was left alone a lot and my supervisor didn't spend much time with me giving me feedback or anything. I just did what I was told.**

QUESTION: Did any of you say "No" to your supervisors if you felt they were asking you to do something you didn't feel comfortable with because you didn't have enough experience?

5- **I definitely felt like I couldn't say no. Well my boss was quite hectic. I just couldn't. She was quite temperamental. I probably would have just been given a mouthful in front of everyone. She also used to speak about us to her clients so you never really wanted to step your foot out because you felt like she was going to be unethical. I probably spent 50 percent of my day just doing filling and admin work, basically being her Personal Assistant. Then when she didn't feel like coming to work I would see clients but when she did come I didn't see clients. It was a big confidence killer because I didn't really feel like I knew what I was doing. Also once or twice I didn't know what I was doing and she was like, "well didn't you learn that in university?" It's the culture there they don't help you and its either sink or swim.**

6 – **I was happy with my internship I didn't have any issues with my supervisor but I feel like the same you get chunked in the deep end. From day one you get given patients. You don't get briefed you don't know the history, you don't know any of this stuff, what's going to be wrong with the person and you have to go and see this person now and you know you are not quite ready or prepared for that. There is a very abrupt**

transition from theory to the practical. For me that worked but I don't think that everyone would respond to that approach.

1, 2, 3 and 4 agreed with this by saying yes or nodding their heads [from the field notes].

QUESTION: You may have to rehabilitate people with heart disease or chronic disabilities so I am just thinking is sink or swim appropriate. What do you think?

6 – I feel that we cover enough of the medical our theory at university. We also have to do first aid and CPR training but where I think there is a shortfall is that the supervisor won't, or certainly mine didn't, attend a session and let you take the lead and watch you with the patient and then afterwards sit down with you and say, "Ok this is where I think you could have done better" or "I was very happy with the way you did this," or "here is what I think you did wrong." There is no sort of feedback or learning from the process. They are supposed to do that because that's the way you learn.

QUESTION: Let us move on. How did you feel about the teaching during your Biokinetics Honours year?

1 – I thought mine was terrible. Honestly, some lecturers didn't pitch and didn't seem to care much when they did. One of the lectures I had just wouldn't pitch up for practicals. We would go to the gym and line up and wait for her to come and she just wouldn't arrive. Eventually we would end up reading the book and doing it ourselves on each other without any supervision. We complained to the department and HOD but they didn't do anything they would say that she is doing something for her Masters or PhD. So they were just like, "sorry," she has to do something for this and she can't come through. I mean it's your Honours year and you're just not getting anything and I also think a lot of the lecturers weren't very prepared for lectures. Sometimes if they had something more important they would just go through the work quickly and leave....and so I didn't enjoy it at all. I also feel we could have done a lot more during the year than what we actually did do.

2- We had huge fights with our one lecturer because she didn't know anything about academics and she would mark everything like a two year old. If you didn't write the 10 steps

you didn't get the points. She couldn't see the bigger picture in the theory. The people who did best in class just repeated her notes. For me it was very hard I came from a background where they taught you to think laterally and then when I arrived here it was like 2 steps backwards. It was very hard for me I must be honest.

3-I think we had one good lecturer and then we had a few questionable ones so it was kind of 50/50. Luckily the good lecturer took all of the important classes and taught most of the syllabus.

4- When it came to anatomy and our background I don't think we could have had a better background. But then on the other hand we had very questionable lecturers. But you just have to make the best out of it whatever lecturers you get. They tended to teach the same thing year after year.

5- Mine. I went to a university [name removed] the first year they offered the course so it was a bit of a mess. I went from another university [name removed] undergrad that was the biggest thing for me. Because I think the new university did a lot of practical at undergrad. I hadn't done half the stuff that they had done. I had never done blood pressure, ECG's and all of that, whereas they had all done that in undergrad. I think it would have been a better transition if I had stayed at the university where I did my undergrad. I felt that I had to do my whole varsity career again. And then it was their first year so it was a mess they didn't seem in control of the programme and things just didn't get done. It looks like their undergrad was a better course though. Ya, I think it definitely was but that's another point from talking to others that trained when I did at different varsity's it seem like there is no consistency in the courses..... and if you are going to take students from another university there has to be some kind of standard. Well, there is supposed to be a standard and now I think they are looking at operating Biokinetics as a four year degree which I think is going to be much better.....so you can cover everything in four years as opposed to cramming everything into one year.

1 -There is a huge difference between the standards of lecturing staff and also what is taught at different varsities when I compare my work to some of my friends work. It also depends what the lecturer is interested in. One lecturer we had would always ask the steps to quit smoking. Every single test you knew that would be there. In my final exam in my practical that is what he asked me. When I told him that realistically if you are working with people

you can't make them do anything, all you can do is inform them of the facts and help give some advice but ultimately the decision has to come from them. So I don't think I got that right because we had a difference of opinion he just wanted the steps that work...according to him. But you know what I mean, the lecturers have an opinion which they try to force on you and if you don't agree then it goes badly. I had one friend that studied Biokinetics last year currently doing her internship this year. I asked her what questions they got and it was basically the same that we got asked in the exact same order that we were asked. I actually told her what questions we got for our exam and she prepared them and got them. I mean if you have the same lecturers all the time they don't change...they don't keep up with new stuff.

5- It is like that they have a formula and they go with it. I also think the selection process for Bio Honours where I did undergrad and Hons is very dodgy. The way that they do it is not fair. If you are like in the 1st team rugby and they need you for another year you will be there.

1- That's true.

5- And the thing is like when you are in your third year and you know everyone in your course and you know these people aren't passing and you are trying so hard and passing and then you see who makes it into Honoursit is very dodgy and de-motivating.

6 – Yes, It happens. Some people get in because they seem to be favourites or something.

QUESTION: What do you mean by not passing?

5 – Failing tests and assignments and not making the required year mark...who knows how they made it to exams!

1- Ya, in our year it was also very dodgy.

5- Some people try so hard and they only end up getting a three year degree in Human Movement Science and they can't do anything with it really except becoming a sports coach and that's their life. And that is not what they wanted to do. I think there needs to be something done about this[the selection process]. Everyone knows it at my varsity...I don't know if the other universities are like that.

1- Ya it was terrible. A lot of people that got in didn't pass everything... they seemed to be...what is the word ...yes, condoned, they shouldn't have been there. The people that should have been there that did have the marks and the need and passion to study didn't get in and had to do a year of nothing and wait to try and get in the following year or just do sports coaching.

5- I almost feel that when you get to where we are that you have gone through a lot. Unfair selections, difficult Honours and an internship year where you didn't get all the help you needed, which is difficult and then getting our own practices and seeing clients...without any training in running a practice.

6- I think once you are qualified there are a lot more barriers to starting your own practice because you didn't learn what you needed to in your internship and Honours year. I just wanted to add to what I was saying. The university stuff I agree with [participant] a lot of the stuff is outdated that you are learning. It's not current. So you're not following new trends in terms of research and exercise practice. We were lucky in our year in that we had a professor who was very proactive in research. You had to go and research stuff. That was the exception rather than the norm. The other lecturers were just teaching the same course over and over again and it may have been stuff that was ten years old. Then when you get out to practice you find that things have changed. Often the guys that are working and teaching in academe are the guys that never made it in private practice and don't have private practice....not all of them are qualified Bios so they just have no idea.

6 – No, you're right they don't all practice and they don't all know what is going on out in the field. They have no idea of how to deal with patients. Maybe they did 10 or 15 years ago...but I don't think so. But many lecturers haven't ever, and certainly aren't now, running successful practices so how can they teach us? Maybe there are some out there at different varsities but in our year at university they certainly weren't.

4 and 5- said yes they agreed

3- I just want to add that there is a bit of a limitation in the courses about being taught how to run a practice on your own. I think they all mentioned it earlier [other participants]. The way to make it in Biokinetics is to have your own practice, but what experience do you have?

Financials, administration, tax...you are not taught anything like that so I think there is definitely a gap there.

1 – Also I think where there is a shortfall in the course because I was never taught ICD coding or how to deal with medical aids and no one I have ever spoken to has been taught that at Honours level. Ya so I didn't even know what ICD 10 was. When you do practicals going to the Bios and so on you don't actually see that side of it. So I get to my internship and there are ICD – 10 codes and I don't know what they are or what they are there for. So you don't even know how to invoice a client. And that's half of the work. The trouble was my supervisor was terrible with his invoicing so I didn't even learn from him how to do it properly. He just used a copy and paste approach and used the same thing for every person. The same ICD 10 code and same four treatment codes and its only through learning by going to courses that I figured out that was wrong and unethical.

3- I was just taught ask any code so that added up to the amount the supervisor wanted on the invoice...so I didn't know any better either.

1- Ya, that's it so it adds up... [Laughs]

3- Ya [Laughs]...I had to put in my own codes and do my little calculation on the side to make sure it added up to the right amount. It was very unethical.

4- It's a very big learning curve when you go from university to an internship and then running your own practice....you aren't prepared properly for either so you don't know what's right and wrong at first.

3- I don't think anything about my internship was ethical not one part of it.

QUESTION: Let me ask you this, how did you experience your internship overall?

1- Mine was negative. I had to do a lot of learning myself and I didn't learn what I needed to from my supervisor. I learnt more from the physio's in the building and talking to other people in the gym than what I learnt from my supervisor. So I learnt on my own...and something's were not right like the billing.

2- I was very fortunate I think I learned a lot about running your own practice to rehab. I think I was in a practice that is supposed to be the standard but unfortunately, from what I hear now and what I have heard from others, it was more like an exception. I had a supervisor that did everything ethically and was supportive. I had a good experience but I don't practice!

QUESTION: Can you explain why?

2- Firstly for me it was the money and then secondly I just got tired of being in a gym every day for 8 hours. I eventually reached the point where I was like no, I can't do this anymore. I found it very draining..... What we were talking about earlier about the psychology of it. You might have a disabled person then the next patient is a retarded child who slaps you in the face... it's just too much. You get to a point where it is just too emotionally draining and you don't want to do it anymore.

QUESTION: Do you feel you were prepared for that aspect?

2 - I don't think you are prepared to be with people all the time and you have to put on this happy front uplift them and get them motivated. It draining to have to be so positive all the time. We didn't do enough practical psychology classes so dealing with this is hard.

3 – Obviously, I mentioned that I had a negative experience and I don't practice either but I do think that there were positives that came out of it. I mean sink or swim... I learnt to swim, I taught myself and for my own personal self I think I grew quite a lot that year...it was very hard but I did grow and learn about myself. I won't say I am out of the field just because I had a negative experience. Obviously working all those long hours and being alone certainly influenced me....as I said before my supervisor just wasn't around much. It wasn't a good fit for my personality and then the year after that when I actually got an official job working as a Bio the working hours were terrible because you work early morning and late eveningfor me being a people person just having the whole day alone while everyone else is working wasn't good...I was bored and found it hard. I think that the selection process might have a shortfall here....no

one looks at personality. Look you work with people but people who are in rehab are often not so happy and that is difficult. I think selection should look at other things not just marks or who plays the best rugby!

6 - Yes, I identify with that. You learn a lot about yourself and if you can't learn to swim you cannot grow as a person.

1- Well, good luck with that....they give you a story I actually complained about that at my university [name removed]. They said no we can't just take people who are going into practice you also need look at the people who aren't going to practice and who are going into the academic side of it. Obviously, that doesn't make sense because if you don't practice and have never practiced you shouldn't teach....

3 – I know at the varsity I did undergrad at [name removed] they just look at marks. They take the top 10 and that's it which doesn't mean that they will be good with people. They usually only take their own students as well which doesn't seem right

4- I think my internship was good overall. I got good exposure at different practices. Every month I would change to one of the different practices that the supervising Bio had and each of these were based in a different environment. One was in a school, the other at a virgin active and the other was a private practice so that was cool. From that I decided where I would like to base my practice so, I learnt a lot. In terms of learning from my supervisor I did learn a bit of stuff in the first few months but then I was left a bit in the deep end. But in my first year of actual working, not internship, I learnt from my boss...I would call him a brilliant supervisor. He took the time to teach and I learnt a lot from him much more than from my supervisor in my internship year.

5- I wouldn't really say it was a pleasant experience. I think I learnt a lot in terms of learning how not to run a practice so...In terms of being personable with clients I learnt a lot about what not to do by watching my supervisor!"

5 – In my internship year I felt like I was more professional than my supervisor. In our job you can get too personal about what you say to clients and she would bad mouth me to clients and that would...I mean that didn't sit well with me. I don't see my clients outside of work. I don't speak about my stuff unless they ask and just keep it very general. I don't like that. So I just learnt how to be a little more professional for instance, if there were cardiovascular

patients or people she never took blood pressure or heart rate. She didn't have a heart rate monitor, I used to use my own heart rate monitor. Those things they are your job otherwise you're a personal training. If you don't care that someone may have a heart attack because you're not doing your job then what type of example are you giving? It's your job actually. I learnt things from reading and personal trainers in the gym...not my supervisor. So I think I learned a lot of that stuff because if you neglect things like that people can actually die...I covered for my supervisor. I think by the end of my internship I was wondering what was doing with my life because I hated the job. You know it was terrible I hated my life, um... so it was a terrible experience but you still learn what not to do.....and you still learn about clients. The sink or swim thing.

6 – I was happy with most of my internship. I know everyone had challenges, I also had my own challenges. I would have liked it to have been a bit more clinical and I would have like to have learnt more from my supervisor. I can identify with [participant 5] about their supervisor not really being too bothered and happy to carry on and do personal training and pass it off as Biokinetics.

5- Ya there was a lot of unethical stuff. We all had different supervisors but it's the same culture. No one really cared about their actual job as supervisor. No one actually checks what they do so they became supervisors after learning from their supervisors who didn't care you can say it's almost like a pyramid scheme!

6 – It is a bit in-house nepotistic in that way in the profession. The guy that started it trained some guys and then they become supervisors, but they did what he did. For example they learnt how to invoice from him and we learnt from them but his way was wrong from the start. Everything trickles down, most supervisors follow that route. They want to make the most money and do the least amount of work...these guys exploit interns.

QUESTION: Let us move on. Did you all cover the assessments or evaluations that you were supposed to in your internship year?

1, 2,5 and 6: No

1: They just signed it off so we could qualify – not very ethical but it happened to a lot of my friends.

3- I did all the requirements.

4- Me to.

5: Well, I was not even close...nowhere near.

6- Some areas yes but some no.

QUESTION: Those who did not make the minimum requirements can you explain why?

1- Some categories you would have more say knees if you were at an orthopaedic practice so you would see way more knees but not see cardiovascular or metabolic. Sometimes the practice specializes in say, knees then you don't see hands. That is why I think 6 months in a private practice and then 6 months at a hospital would be better you would have more variety...or different practices that specialize in different things. Some interns do that but not all depending on where they intern.

5-Our practice was more orthopaedic. I think I had one cardiac patient the whole year where you are supposed to have like 50. But we don't get our internship if they don't sign off so they do.... it's not our fault, probably the system and the accredited Bios know but they make no effort and just sign off.

5- It is very unethical but that is how it is and you cannot question it....well you could but then you wouldn't qualify....so what do you do.

1- I think it's hard on the supervisors from their side as their practices are often specialized. It is the system. If they want to keep it as it is they shouldn't specify a number or they should make sure that at least a few of each are covered in Hons practicals.

4 – I agree with that.

5 – Me to. You can't specify cardiovascular if the intern is at an orthopaedic practice – then the system must be changed or rotations for all made compulsory [at different practices].

1- If you are not in a cardiac practice you are just not going to see that many cardiac patients.

4- It's very unlikely that you would see the numbers necessary unless you were based at a specialist practice so you might find people just making up numbers and the Bio signing of.

6-I didn't do the minimum number in each category but I at least did more than one which has helped.

1: I just put the number that you have to see and it was signed off and, well, just about everyone does it.

4: No one checks it, no one, you're right. It's unethical.

6. It is difficult though. The Bios are accredited and run a practice and if they specialize what can they do? I think another plan needs to be made or no minimum numbers. You know, you could just find out if the intern is competent, that is the supervisor could get a patient or another intern or Bio to simulate problems and then they could gauge if the intern was competent in that area.

QUESTION: Are you aware that the HPCSA of your division does evaluate practices that are accredited?

4 - I think that is a bit of a front honestly. I have seen some people that have come in or rather around to mark off the practice as a suitable place and its nothing..... what I mean they just come in there and check the space and they don't actually do much else...I have never seen them asking interns questions....they are gone in 30 minutes.

6 - I think they pretty well do that with universities as well – I think there is a lot of window dressing.

1 – Ya [Laughs] I don't think they are effective and I agree with the window dressing thing.

QUESTION: I see that time is almost up (54 minutes) so time for a couple of questions. Why didn't any of you complain to the HPCSA to your division, and I mean

constructively, about shortfall in the internship year or, for that matter, your Honours years?

1- You don't complain because at the end of it you have got a job. You need to work. At the end of the day I have got medical aid, petrol, housing, food you have got to work. What if you complain and then you don't qualify...

2- If you complain or send in complaints they might take it and use it against you...especially as some people stay in the practices they intern at. I would be too afraid to [complain].

6- Yes, 1 [name removed] still works for his employer so you can't then report someone and expect to still carry on working for that person. I suppose that is how the cycle continues and nothing gets done!

5- We all had the same experience. I know people that I went to university with also had crappy experiences...but it's like ok it's over and you just carry on. It's not like you have that many places to go because you don't have a lot of experience so you stay there with that person and you just kind of suck it up..... and do the best you can. You don't complain because you can't.

3: It would be difficult to report something at Honours or in your internship because you would be too scared because, at the end of the day, you need to qualify and work...I mean what if they said no you haven't done this or that so you must re-do your internship or Honours...

QUESTION: So another question arising out of the discussion is, do you think that those supervising Bios are behaving unethically?

1 - Ya and I think they know it

4- Ya, but mine was okay in that at the end of my internship I had a final meeting with my supervisor and he gave me a questionnaire sheet where he ask me where he can improve on his supervision and as a supervisor and all of that. So I was honest in that and Ya it was constructive criticism. I said what I thought he could improve on and I think the fact that he

gave me a form to fill out showed me that he was interested in what I thought. All supervising Bios should do get feedback from their interns.

5- I think that they [supervisors] don't mean badly but they just plod along. It the mentality of those people who qualified a while ago. Like was said before it is their culture. I think they do know that some of the things are unethical but they have done it for so long it doesn't actually matter to them.

1- Ya I think they do know but because no one checks on them or knows what they do they just carry on. Look a lot of supervisors do their best I'm sure but I'm also sure that many don't!

6- I also think that they do [know some of the things are unethical].But just to revert back to the previous point you [as an intern] also develop a relationship and feel a sense of responsibility and loyalty to the person so the interns working for them after completing their internships don't feel like reporting them is the right thing to do. I certainly wouldn't feel like that would be the thing to do....it would be disloyal. I do think like 4 [name removed] said that you should fill in a rating or something at the end of your internshipthe HPCSA could also ask interns at the end to fill in something as long as it was anonymous and confidential.

2- Yes and because you burn bridges in your future if they [supervisors] know who complained.

QUESTION: So those of you who have had negative experiences in your internship are likely to follow the same pattern because that is what you have been taught?

1- **No, definitely not I would make every effort to be a good supervisor and wouldn't repeat what I had to go through.**

3- I think what 5 [name removed] said...you learn what not to do. I think in some ways we may have been too harsh on our supervisors because I think there is also a shortfall in that there if there is a protocol to follow for them being a supervisor it isn't very good. I think what they should do is a 4 week course and go through what they should do with their interns, I mean the people running the HPCSA in our division could appoint people to do it and it could be part of CPD points because you couldn't expect someone to pay for it and not

have some credit somewhere. Something needs to be done because now it has come to that point where supervisors are only employing interns because it is cheap labour and it shouldn't be about that.

1- **Definitely, I agree. I also think that there is a culture of using interns as cheap labour.**

5- **For Sure. That's because we don't make that much money and for them to pay for a Bio that's registered and has experience it's not practical for them, they can't make a living [supervising Biokineticists]**

1- **They can get like 3 interns and see triple the amount of patients and not do any of the work.**

5- **Yes, I was paid R50 rand per session..... That's what I was getting paid in my internship.**

6- **Well, it is hard for them especially if they are renting space because they then have to pay rent and there is a lot of financial pressure on them to take interns at their practice. It is quite difficult to pay someone a good salary especially if they are qualified because they have to pay all things salary, rent, tax when you only have so many hours that you can see patients and a set rate that you can charge a patient.**

QUESTION: Coming out of this it seems like the rate Biokineticists are paid hourly for seeing clients could be an issue.

4- **Yes I do. Physios and psychologists earn much more. The rates need adjusting. Well it's just a set rate for medical aids but you can charge over and above that rate and your patients just have to understand that. You just have to tell them that and generally I think that people understand that because we are in a medical environment. If you look at Physiotherapists and Chiropractors we study pretty much the same in terms of year...we are almost the same as them in terms of what we do and there is only one little bit of separation between us and the fact that they can charge...I think....double the amount for an half an hour session whereas the Bio is generally doing a full hour I think that it is unfair. Psychologists earn a lot more I have heard as well. This should be taken up by BASA or our division of the Health Professions with the medical aids.**

6 – I think Physios, Chiro's and Psychologists do a year more training. Ya for sure they do a year extra. Maybe this is a gap in the training that needs to be covered. And to do that someone mentioned saturation maybe the market will be less saturated and people will find it easier to make a living because people will be able to afford to pay a bio intern what they should pay them. I mean our degree could be structured for four years doing practicals from the start and then the internship and then a Community Service....Then there shouldn't be a problem with the evaluations either. I also think that saturation is a problem in itself. It because there aren't a lot of new practices that are set up because there isn't enough work and then there are too many people coming out of university. But the fact is that the profession is not reaching rural areas and it is only reaching a very small very specific population...people that are able to pay for it. Also the majority of Bios now are female and not many Blacks [male or female] and not so many males [all groups].

5 – I don't think that it is practical as it is now something needs to happen so Bios are better known and used by everyone. I think the profession needs better marketing.

1 – Ya, I think it is predominately white females who are qualifying now and we don't have many rural practices....there is no work there people don't know about Biokinetics.

5- I think it is because it is the wealthy people that can afford it. They have their op, go to physios and then to us because the physios refer, most of them know about Bios....

1- Community Service would be good. Physios and OT's do it [Occupational Therapists]. Then you will have to go into rural areas and people will know about it. There should be Bios in all the hospitals as well, not in private practice, paid by the government....that would help a lot.

5- When I was at Wits one of our rotations was at JHB General because it was just across the road. We would go there and shame they would stand in queue in the physio section and then they would come to us for one hour and it's just that one hour. But they can't...you know those people can't come to the hospitals twice a week to see the Bio....so Comm Serv would have to be structured properly.

4- I just think people just have such different priorities it might be difficult ...but they do come for physiotherapy so it could happen. People in rural areas have low incomes and they need to survive so to have Bios at hospitals and clinics the Department of Health must be

involved in promoting the profession. It would be good to have them everywhere for rehabilitation and people need proper rehabilitation after illness and injury. You know we do seem to have a lot of females in the profession which is mostly White there are very few from other groups.

5- They would definitely benefit. I am just saying that if your priority is not fixing your shoulder your priority is finding food and getting money to get food then.

1- Ya that would be good. The Department of health they would pay you and you would meet the need in rural areas.

4- They [people in rural areas] would definitely benefit from us doing Comm Serv. I am just thinking with what people go through in their lives it wouldn't be a priority. Getting people there would be the thing there would have to be transport services like at the hospitals.

6- I think what 5 [name removed] is trying to say is that there is a shortfall in the education or knowledge of the public on what a Bio is and what they can do.

1- That's why they need to make a Comm Serv year so that we can start getting into it and people can start realising what we do. Once you have gone to physio then you can go to Bio. They need to look at getting Bios more out into the communities because most white people and even my friends that I see when I say I am a Biokineticist they don't know what I am talking about...They say what's that?

6 – Its true even in my social circles, or some referrals don't even know what it is.

2- Doctors too I work in a spinal department they have no idea what it is.

6- And surely they are the ones that should know what it is because they should be referring. You know we need more Black Bios I don't think most schools know what a Bio is so they are not likely to promote it. I also noticed that in my year we had a Black guy doing Biokinetics and he really struggled with the stats and concepts in anatomy. He was from a rural school – I think bridging courses can be introduced to help.

COMMENT: Thank you all for your input. We are ending here as we have run over the 60 minutes. If anyone would like to add anything now please do. Thank you.

Appendix 7: Semi-structured questionnaire for phone interviews

The semi-structured questionnaire was compiled from reading questions in the survey protocol and those used in the focus group. The questions were asked and probing took place if further clarity was required after each question was answered. Each interview took between 10 and 15 minutes. A follow up call was made to participants to verify the transcripts.

QUESTION: Can you tell me about the challenges and experiences you had during your Honours Biokinetics years.

QUESTION: Can you tell me how you think the course could be improved?

QUESTION: Can you tell me about the challenges and experiences you had during your internship year?

QUESTION: Can you tell me how you think the internship year could be improved?

QUESTION: Is there anything else you would like to add?

Thank you for participating