FACTORS INFLUENCING PERFORMANCE OF NUTRITIONISTS IN TEACHING AND REFERRAL HOSPITALS, KENYA

BY

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DECLARATION

I declare that *Factors influencing perceived performance of nutritionists at the teaching and referral hospitals in Kenya* is my work and that all the sources which have been used or quoted have been acknowledged in the reference.

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DEDICATION

This study is dedicated to my dear children Antony Collins Lusi, Tracy Chelsea Ayuko, Jackson Paul Wanjir and Lydia Ann Akinyi and my parents Jackson Paul Wanjir and the late Ann Atieno Wanjir.

ABSTRACT

Assessing staff performance is a key aspect of personal appraisal in any organization. It is not unusual to find staff that work and perform at the or close to the required level. It is more common to find employees who have issues which make them not to perform to expectation. Despite the importance of nutrition care in patients' management, health sector strategic and investment plan show that there is a shortage of nutritionists across the country with patients-nutritionists ratio being 38.6 million against 563. Evidence show that staff shortage greatly affects job performance negatively. It would be very difficult to advocate for more nutritionists to be employed without ascertaining that staff shortage among other factors affect performance. A lot has been done to assess staff performance but very little has been done to assess factors affecting their performance, as a way of understanding why interventions that require behavior change either succeed or fail. The aim of this study was to explore factors which influence performance of nutritionists at three teaching and referral hospitals in Kenya. It specifically determined the performance of the nutritionists and system and organizational factors which influenced performance of nutritionists, established individual and social factors which influence their performance and lastly established the factors which best predict performance of nutritionists at the three teaching and referral hospitals in Kenya. A hospital based cross-sectional study was conducted at Kenyatta National Hospital, Moi Teaching and Referral Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital which are accredited to offer clinical nutrition services by KNDI for a period of twelve months. To get the sample size saturated sampling technique was used. Principal factor analysis was used for data reduction and hierarchical regression analysis was used to establish factors that best determine performance. A structured questionnaire was used to collect data from 94 participants out of 103 nutritionists giving a 91.2% response rate. Majority of the respondents were female 78.7%, with a mean age of 38.4 years. Most respondents were university graduates (68.09%). The results exhibited positive relationship between performance and system and organizational factors, individual factors as well as social factors accounting for variances of 62.36%, 61.7% and 48.73% respectively. Among the three domains of conceptual factors, only social factors elicited statistical significant relationship with performance based on t-test beta-value ($p<0.05$). Since the results revealed significant relationship between key indicators of social factors (community expectation and peer pressure) and performance, nutrition managers and policy makers should design programs to address social issues affecting nutritionists.

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LIST OF ABBREVIATIONS AND ACRONYMS

AHWO	Africa Health Workforce Observation
CBO	Community Based Organization
ESPEN	European Society for Parenteral and Enteral Nutrition
HPT	Human Performance Technology
HRH	Human Resources for Health
ICU	Intensive Care Unit
JOOTRH	Jaramogi Oginga Odinga Teaching and Referral Hospital
KMO	Kaiser-Meyer-Olkin
KNDI	Kenya Nutrition Dietetic Institute
KNH	Kenyatta National Hospital
MCH	Maternal Child Health
MoH	Ministry of Health
MTRH	Moi Teaching and Referral Hospital
NIMH	National Institute of Mental Health
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Awareness	It is having correct information about a subject. The awareness factors included Knowledge.
Individual factors	This refers to the intrinsic factors or characteristic which influence the nutritionists work performance. In this study, the intrinsic factors were the nutritionist's personal characteristics.
Intern	This refers to an individual who has just qualified as a nutritionist and is attached to a hospital to acquire more practical experience.
Level of education	This refers to the highest attained academic qualification
Motivation	Refers to an individual's desire to do things. In this study, the motivation factors included both intrinsic and extrinsic factors which interfere with one's desire to do things.
Nutritionist	In this study a nutritionist is any person with a certificate in nutrition related course and must have had accreditation from Kenya Nutrition and Dietetics Institute.
Nutrition Care Process	Systematic approach to providing high quality nutrition care to patients.
Performance	It is implementing a task to certain standards and in line with the goals of an organization. It entails staff availability, productivity, responsiveness and competency
Performance appraisal	It refers to a strategy used by an organization to assess its employee's performance. The performance factors include knowledge and proficiency of the worker.
Performance standards	These are written statements describing how well a job, task or an activity should have been done. In this study performance standards focused on policies, procedures, guidelines and available protocols.

Provider competency	Person's ability to perform his or her job functions. In this study, the provider competency factors will include individual's knowledge, skill, ability, capability, behaviour, aptitude and judgment applied to perform required work to meet the institutional goals.
Skill	This refers to a person's ability to perform a task well. In this study, skill will include nutrition assessment, counselling skills and managerial skills.
Social factor	These are the factors which affect how people relate to each other.
Staffing levels	Refers to the number of staffs in an institution according to the staff establishment.
Systems/and organizational factors	These are the external factors which influence a nutritionist's work performance. In this study, the factors will be those that are related to the organizational structure and processes, organizational culture and social factors that influence performance.
Volunteer	It refers to an individual who has undergone nutrition and diet related training offering nutritional services at the study site with no pay.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Human resource is the backbone for provision of quality health care globally (Yami *et al*., 2011), whereas performance according to standards is the corner stone of quality assurance in any organization, healthcare included (Marquez, 2001). Highly-qualified motivated health workers are important for adequate health provision (WHO, 2006). Organizations invest heavily on their staff to achieve their set goals. With today's increasing competitive healthcare services and the urge to improve health services, the Ministry of Health in Kenya is placing a lot of emphasis on the human resource as a source of competitive advantage.

To determine workers' performance, the government of Kenya introduced performance appraisal, with each government department in the line ministries having set targets or objectives to be achieved. Even though this strategy enables managers both at the national and county levels to evaluate the workers' performance it does not explicitly explain why the workers perform to their levels. Studies have been carried out to evaluate performance of health workers, mainly targeting nurses, pharmacists, clinicians and doctors (Vaksalla & Hashimah, 2015; Kabir & Parvin, 2011; Jacobi, 2010; Ndetei *et al.*, 2008; Lindelow *et al*., 2005), with little information on the performance of nutritionist as health workers. Nutritionists are important in disease prevention and dietary management of patients in clinical setting to ensure optimal health care, thus there was need to assess the performance of nutritionists and factors which influence their performance in clinical settings. Though there is great interest and willingness in nutrition care, Elsevier (2008), reported insufficient practice compared to the proposed ESPEN guideline for

nutrition therapy. Therefore, this study established factors which influence performance of nutritionists at the teaching and referral hospitals in Kenya.

Scientific evidence suggests that health systems and organization related factors influence health worker's performance (Qasim *et al.,* 2012; Abdel-Razek, 2011). These factors include inadequate resources and supplies, nature of the activity to be undertaken, frequent staff turnover and staff shortage, poor working environment, lack of additional training and opportunities for promotion, poor management system and poor remuneration system among others (LeBlanc *et al*., 2011; Witter et *al.,* 2011; Jacobi, 2010; Mbindyo *et al.,* 2009; Van der Merwe, 2008; Chimanikire *et al*., 2007). However, there is a paucity of data on how these factors influence nutritionists' performance. Moreover, in poor resource settings like Kenya this is further compounded by inadequate staffing levels that can influence quality of care (Ministry of Health,2014 a). For example, in Kenya the staffing situation is wanting especially among the nutritionists, where the total number of practicing nutritionists is 563 against 38.6 million people to be served (Ministry of Health, 2014 a). This is way below the recommended staffing need and norms by population of 2335 nutritionists against 38.6 million people (ibid). In support of this is a study in Southern Sudan which indicates that workload due to low staffing levels affect performance among health workers (Kilel, 2012). On the contrary, another study indicated that staff shortage is not a crucial factor in influencing performance, but training of the health workers was significant (Maestad *et al.,* 2010). In addition, a study in Uganda reported that health workers are generally responsive to the needs of their clients thus improving their performance (Lutwama *et al*., 2012). These data indicate that there are context-specific issues influencing performance of health workers. Other than staff shortage, absenteeism and poor team

work affects performance and may result into low work output (Lindelow *et al.*, 2005; Franco *et al.,* 2002; Gibson, 2000). These data also indicate that there is need to understand context-specific health systems factors that influence the performance of nutritionist. Thus, this study was designed to determine health system and organizational factors which influence performance of nutritionists at the teaching and referral hospitals in Kenya.

Apart from health system and organizational factors, individual factors which are categorized as -inter and intra personal traits are critical in influencing job performance and may also influence performance of nutritionists in health care facilities (O'Neill and Natalie, 2011; Smithikrai, 2007). These factors include attitude, mental, innovative, initiative and physical ability (Awadh, 2011; Colbert *et al.,* 2004; Neubert, 2004; Marquez, 2001). Indeed, studies have shown that job performance depends on individual characteristics (Boon *et al*., 2012; Luoma, 2006). Other studies show that cognitive ability, teamwork, communication among health workers themselves and with their patients as well as absenteeism impact on health workers performance (Adeoti & Olabode, 2012; Castka *et al.,* 2001). Moreover, employees' perception about their work and emotional stability also affects their performance (Awadh, 2011; Mtengezo, 2008; Neubert, 2007; Colbert *et al*., 2004). Therefore, this study looked at both inter and intra personal factors influencing performance of nutritionists at the selected teaching and referral hospitals in Kenya. Another individual factor which is reported to influence performance is mental ability which relates to the general intelligence or specific requirements such as special problem-solving skills (Awadh & Wan Ismail, 2011). Although these individual factors have been shown to influence job performance, there is paucity of data on how they influence nutritionists' performance in

clinical settings. Thus, this study was designed to assess individual factors which influence performance of nutritionists at the teaching and referral hospitals in Kenya.

Other factors that influence job performance are social factors (Armenakis, 2007). They are understood to be factors concerned with relationships (ibid). They include factors such as marital and family issues, financial and illness that may be associated with mental instability (Van der Merwe, 2008). Additionally, social problems like drug abuse, depression, stress, anger, financial constraints and divorce or illness among close relatives or friends may greatly impact on job performance (Lerner and Henke, 2008). Psychosocial factors are associated with decreased productivity due to symptoms that weaken energy, affect work habit and loss concentration, memory and decision making (Zhang and Bartol, 2010). Although some of these factors may be potential contributors to poor performance among nutritionists in Kenya, this relationship has not been fully explored. Therefore, this study established the social factors that influence performance of nutritionists at the teaching and referral hospitals in Kenya.

Since the previous studies that explored factors that influence performance among health care workers only focused on single association (Awadh, 2011; Mtengezo, 2008; Naubert, 2007; Colbert *et al.*, 2004), implies that there is an empirical need to investigate the contribution of key performance predictors in the single model. This study therefore determined factors which influence performance of nutritionists at three teaching and referral hospitals in Kenya and how they related to each other.

1.2 Statement of the Problem

Nutrition is a labor-intensive discipline, which is relatively new in the Ministry of Health in Kenya. The Kenya Health Policy 2014-2030 document, reports that seven out of the ten risk factors to good health contributing to mortality and morbidity are nutrition related even though nutrition is classified among other healthcare discipline not giving it the importance it deserves even though it is very important in patients' management (MOH, 2014). The quality of nutrition services is dependent on the availability of motivated, skilled and competent staffs. Though there is great interest and willingness in nutrition care, Academy of nutrition and dietetics (2017), reported insufficient nutrition practice globally as compared to the proposed ESPEN guideline for nutrition therapy. Lim *et al.,* (2014), in his study; improving the performance of nutrition screening through a series of quality improvement initiatives noted high incompletion and error rate among measurements taken using screening tools. The incompletion and error rates may be experience among nutritionists in Kenya, factor which have not been explored. There is also a problem of inadequate quality health services rendered to the Kenyan population, even though the National health policy advocates for improved quality of services (Ink and Imhoff, 2002). Lack of consistency in providing health care identifies the need to evaluate care processes, including how nutrition care is carried out.

Many factors influence performance of health care providers and may influence the performance of nutritionists as well. Some of these may include organizational factors, individual factors and social factors. Organizational factors such as inadequate resources and supplies, nature of the activity to be undertaken, frequent staff turnover and staff shortage may affect performance of nutritionist. Other organizational factors which may affect nutritionists' performance are poor

working environment, lack of additional training and opportunities for promotion, poor management system and poor remuneration system. Likewise, individual attributes such as attitude, cognitive, mental, innovative, initiative and physical ability may also have an influence on performance of nutritionists. This may not leave out social factors such as marital and family issues, financial and illness among others. There seems to be limited empirical studies on the performance of nutritionists and factors related to their performance making it an area that needs exploration. Unless these factors are explored and their relationship with performance of nutritionists established interactively, intervention targeting improved performance among nutritionists may not find a better platform. This may also have an indirect impact of human resource prioritization regarding capacity building and recruitment. It is on this basis that this study explored factors that influence performance of nutritionists and how they relate to each other at the teaching and referral hospitals in Kenya.

1.3 General Objective

To determine factors that influence performance of nutritionists at the three teaching and referral hospitals in Kenya and how they relate to each other

1.4. Specific Objectives

1. To establish performance factor of nutritionists working at Kenyatta National Hospital, Moi teaching and referral hospital and Jaramogi Oginga Odinga teaching and referral Hospital in Kenya.
2. To determine system and organizational factors which influence performance of nutritionists at the three teaching and referral hospitals in Kenya.
3. To establish individual factors which influence performance of nutritionists at the three teaching and referral hospitals in Kenya.
4. To determine social factors which influence performance of nutritionists at the three teaching and referral hospitals in Kenya.

1.5. Research Questions

1. What is the performance factor of nutritionists working at the teaching and referral hospitals in Kenya?
2. What system and organizational factors influence performance of nutritionists at the teaching and referral hospitals in Kenya?
3. What individual factors influence performance of nutritionists at the teaching and referral hospitals in Kenya?
4. What social factors influence performance of nutritionists at the teaching and referral hospitals in Kenya?

1.6. Significance of the Study

Identifying factors that determine nutritionists' performance as health workers and how they relate to each other is important to researchers, analysts, policy makers, nutrition managers as well as clients. Policy makers at the national and county levels will use findings from this study to develop standards which will form basis of performance evaluation. Nutrition managers on the other hand will use the results to design appropriate learning and performance improvement interventions aimed at improving nutrition services. With improved nutritional care, patients will ultimately have improved outcome. Findings from this study may also add to the body of knowledge on factors which influence nutritionists' performance and how they relate to each other.

1.7. Limitations of the Study

There did not use a previously validated measurement tool to assess the context aspects of the individual, social, system and organizational factors that influences performance, including the supervisory and motivational aspects of work context in Kenya. However, the tool was validated through pre-testing of the questionnaire in pilot study. The also relied on self-reported information and could have had bias. However, this was minimized by informing all participants that the objectivity of their reporting would be necessary for the outcome of this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Employees Performance

2.1.1 General Performance

Performance is the attitude, behavior and action that is possessed by an employee (Saeed *et al*., 2013). Job performance refers to actions and behaviors that are under the control of individual and contribute to the goals of the organization (Sonnentag, 2002). Campbell *et al.,* (1993) described job performance as an individual's level variable which contributes to organization's performance meaning individual's performance plays a key role in organization's performance.

Job performance is a contrast which has different components namely task performance and contextual performance (Sonnentag, 2002, 2002; Motowidlo *et al*,.1997). Studies have shown that there is a correlation between task performance and contextual performance which explains an individual's job performance (Motowidlo *et al.,* 1994). While task performance contributes to the core organizational processes, contextual performance maintains the broader organizational social and psychological environment (Hoffman *et al.,* 2007). Since task performance relates to meeting or exceeding the quantitative and qualitative standards of an individual it measures job performance (Hoffman *et al.,* 2007).

Performance according to standards has been reported to be the corner stone of quality assurance in health care systems (Marquez, 2001). Performance management is the most efficient approach to measure job performance of an individual and its' elements include; objective setting, measuring performance, feedback and reward system (Suchi, 2011; Armstrong & Baron, 2005;

WHO, 2005). Indeed, it leads to identifying developmental needs of employees (Suchi, 2011). Contrary an administrative guide written by the University of Medicine and Dentistry of New Jersey (2012) reported that a well-researched and written job description serves as the basis of control in the hiring and performance evaluation process of staffs.

Performance can be evaluated and appraised with the outcomes, whether good or bad in the process of completing individual job to accomplish personal and organizational goals (Wall, 2010). It also means developing a set of realistic targets to measure progress. It is assumed that measuring and developing performance indicators for health facilities will automatically lead to performance improvement (WHO, 2005). This may not be the case, since health care is labor intensive and requires highly qualified motivated work force. Studies have shown that performance of employees gets enhanced when they are satisfied with their job (Lindelow, 2005; Robbins, 2003) and each staff's performance contributes to group or team performance and overall organizations effectiveness (Gibson, 2000).

To measure job performance, the Ministry of Health has employed the use of performance appraisal which is part of performance management process (Aguinis, 2009). Performance appraisal is a discrete, formal, organizationally sanctioned event usually occurring once or twice a year, which is based on clearly stated performance dimension and or criteria that guides the appraisal procedures and often applies quantitative scores, assigned to reflect perceived employee's job performance on these dimension or criteria, and these scores are later shared with the appraised employee (DeNisi & Pritchard, 2006).

Even though a lot had been done on health workers performance and institutions evaluation little information existed on factors that determined their performance and how these factors relate to each other. Worse still there is scanty information on the performance of nutritionists and factors that determined their performance in Kenya (Lindelow & Serneels, 2006; Marquez, 2001; Lin & Tavrow, 2000). In existence, there is a clear structure for assessing performance which is carried out bi-annually, but rarely does the assessed health worker receive the assessment reports of their performance. This study, therefore, shifted focus from the clinicians to nutritionists who are equally important in patients' management but are always given little attention. It was aimed at assessing the factors which determined nutritionists' performance and how these factors relate to each other.

2.1.2 Performance in the Context of nutrition

Commented [w1]: Literature focusing on nutrition care process is missing. Remember, it is this literature that will help you discuss why nutrition care process emerged as a key performance factor. You need specific literature on this.

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The current era of health care delivery, which focuses on providing high quality, affordable care presents many challenges to health care providers (Lim *et al.*, 2014). This challenge influence performance of health workers and may affect performance of nutritionist as well. To assess nutrition care in a clinical setting different tools have been used including nutrition care process and subjective global assessment (Lacey & Prichett, 2003). Though Nutrition Care Process and Subjective Global Assessment have been recommended as good methods of assessing nutrition care Rolfe Sanson-Fish, (2002) thought that history taking, and physical examination is superior. However quality nutrition and dietetics practice follows four steps as outlined in nutrition care process (Charney & Malone, 2002).

The standards of practice in nutrition care incorporate the nutrition care process as a method to manage nutrition care activities (Kondrup *et al,* 2003). It improves the consistency and quality of patient's or client's care while providing standardized language use by the nutrition and other health care providers (Lacey & Prichett, 2003). To assess the performance of nutritionists, nutrition care process was used. It consists of four interrelated steps namely nutrition assessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation (ibid).

Client or patients enter nutrition assessment which is the first step of nutrition care process through screening, surveillance system data or by referral. Though screening is not part of nutrition care process it is the process of identifying patients, clients or groups who may have a nutrition diagnosis and benefit from nutrition assessment and intervention. Lim *et al.,* (2014), in his study; improving the performance of nutrition screening through a series of quality improvement initiatives noted high incompletion and error rate among measurements taken using screening tools. This may affect referral process of patients who need nutrition care, which means the nutritionists' skill to screen patients need to be assessed.

Nutrition assessment is the first step in nutrition care process. It is the systematic method for obtaining, verifying and interpreting data needed to identify nutrition-related problem, their causes and significance in nutrition care (Porter *et al.,* 2015; Kondrup *et al,* 2003). It is a very important step in patient management as it leads to nutrition diagnosis and poor assessment may lead to misdiagnosis. Of concerned is the high incompletion and error rate among measurements taken using nutrition screening tools as reported by Lim *et al.,* (2014) in a study; improving the performance of nutrition screening through a series of quality improvement initiatives. This error

may cause misdiagnosis of the patients. Therefore, determining the capacity of nutritionists in using assessment tool is important.

Nutrition diagnosis identifies nutrition problem that a nutritionist is responsible for treating independently. With proper nutrition diagnosis nutrition intervention follows (Lim *et al.,* (2014). It is reported as the most unfamiliar component of nutrition care process among nutritionist since they previously never considered able to make diagnosis and making proper diagnosis need experience (Charney & Malone, 2002).

Nutrition intervention is a purposefully planned action intended to positively change a nutrition-related behavior, environmental condition or aspects of health status for the patient including his/her family members or caregiver as well as the entire community (Kondrup *et al,* 2003; Charney & Malone, 2002). It includes diet prescription, nutrition counseling and education. For quality nutrition care the nutritionist's competency in offering nutrition interventions need to be assessed. To support these Mogre *et al.,* (2016) found out that it is important to move education from nutrition care beyond the simple acquisition of knowledge.

The last step in nutrition care process is monitoring and evaluation. It is the preplanned review and measurement of selected nutrition care indicators of patient/clients' status relevant to the identified need, nutrition diagnosis (Kondrup *et al,* 2003). Nutrition evaluation systematically compares the current findings with the previous status, nutrition intervention goals, effectiveness of overall nutrition as a reference standard whereas nutrition monitoring is the review and measurement of status at scheduled times (Mahan & Escott- Stump, 2008).

Therefore, performance of nutritionists needs to be determined based on nutrition care process as a method of assessing nutrition activities at the three teaching and referral hospital in Kenya. It is against this backdrop that this study purposed to determine performance of nutritionists at three teaching and referral hospitals in Kenya using the nutrition care process as a method of assessing nutrition activities.

Research is critical in improving quality of patients care since it helps in providing psychological, knowledge and methods to be used (Kazdin, 2008). Evidence-based practice is an approach to health care, where the health practitioners use the best evidence possible. It can help to standardize practice, by using outcome to improve quality and effectiveness of practice (Mahan & Escott- Stump, 2008). Nutrition care has embraced evidence-based practice which means the nutritionists need to have some knowledge on research (ibid). Therefore, it is critical to assess the nutritionist knowledge on research at the three teaching and referral hospitals in Kenya.

2.2 Organizational Factors and Performance

2.2.1 Structural Factors

Organization structure is defined as the established pattern of relationship among the components of part of a company (Dictionary-organization Behavior, 2003). Organization structure is a key component in human resource management process and it depends on the organization's objectives and strategies. It determines how the roles, power and responsibilities are assigned meaning it explicitly illustrates the chain of command of an organization (Underdown, 2003). This therefore means that an organizations structure can inhibit or promote performance of

nutritionists depending on how good it is. It will only inhibit or promote performance depending on how effective supervisory relationship and work flow influence service delivery (Hao *et al.*, 2012).

There are two types of organizational structure that is; centralized and decentralized structure (Kandula, 2006). Of the two types, the decentralized type is more appropriate for nutrition care services as it allows for distribution of decision making power and some degree of independence (Hao *et al.,* 2012). This may lead to the nutritionists feeling valued thus enhancing their performance. However, there is a paucity of data on the impact of organizational structure on the performance of nutritionists. In addition, a study on the performance of health workers in Ethiopia attributed deficient performance to structural reasons such as transition of health sector model, failure of the government policies to keep pace with the transition towards a mixed model of service delivery (Lindelow and Serneels, 2006). Importantly policy factors lay the basis of the organizational structure and they have influence on performance. These studies link organizational structure and culture to workers' performance. Therefore, it was of essence to understand how organizational structure influences performance of nutritionists at the selected teaching and referral hospitals in Kenya.

2.2.2 Organization Culture

Organizational culture is defined as shared philosophies, ideologies, beliefs, feelings, assumption, expectations, attitude, norms and values (Schein, 2010). Alternatively, it can entail organizations mission statement, corporate goals, leadership style and work ethics shared by everybody (Saetang, *et al.,* 2010). It is also defined as a set of shared beliefs, values and norms

that influence the way members think, feel and behave (Lunenburg, 2011). Dodek *et al.,* (2010) simply defined organizational culture as "how things are around here". Thus, cultural factors in an organization may influence health workers job performance differently and understanding how organizational culture influence performance of nutritionists may be a key tool in human resource management (Ahmad, 2012).

Like the organizational structure there are two types of organizational cultures and it is assumed that they may impact on job performance differently (Ogbonna & Harris, 2000). In a highly bureaucratic and well-structured organizational culture there is extensive control. This organizational culture requires employees to follow standards procedures with strict adherence. It also stipulates well defined individual roles and responsibility (Dodek *et al.,* 2010). The other type of organizational culture is collaborative culture which presents a decentralized workforce with integrated units working together (ibid). There is evidence that the context in which nutritionists' work is associated with adherence to recommendations of clinical practice (Dodek *et al.,* 2010). Therefore, consideration of contextual factors like organizational cultures may be important in influencing the nutritionists' performance. It is against this argument that this study explored cultural factors of an organization influencing the performance of nutritionists.

As part of both organizational structure and culture, management factors have received a lot of prominence as a factor which affects performance. Other factors that affect performance are psychosocial aspects of work environment which include employer-employee relationship, motivation and advancement, job demand and social support (Atambo *et al.,* 2012; Vischer, 2007; Mathauer & Imhoff, 2006). In addition, qualities of supervision, fair distributions of

training opportunity and staff welfare as management factors, are important in improving job satisfaction and consequently enhance performance (Ojokuku & Salami, 2011; Nzinga *et al.*, 2009).

The other factors influencing job performance includes poor team work, corruption which causes disintegration of an organization (Franco *et al.*, 2002; Gibson, 2000). More importantly leadership may also be greatest hindrance to employees' performance (Lindelow *et al.*, 2005). Therefore, an integrated and organized health delivery system should provide accessible, cost effective and a more coordinated care essential in a poor resource setting like Kenya (WHO, 2006). Thus, there is need for strong organizational culture, well-coordinated information system, management and proper leadership, all of which improve performance of an individual worker and an organization and further contributes to employee performance, loyalty, commitment and retention (Schein, 2010). It is on this ground that this study sought to assess how these factors influence performance of nutritionists at the selected teaching and referral hospitals in Kenya.

2.2.3 Staffing Levels

A highly qualified motivated work force is the key aspect of health system performance since it is labor intensive. However, there is a global crisis in the health workforce, as evident by acute shortages of health workers (Bangdiwala, 2010). Significantly Kenya is also facing acute shortages of health workers with an average of 1.3 health workers per 1000 population which is way below WHO recommendation (WHO, 2010).

The problem of inadequate quality health services rendered to the Kenyan population, even though the National health policy advocates for improved quality of services is of great concern. It is however worth noting that Kenya just like other developing countries has faced an exodus of nutritionists among other health workers from the country and the professional to the corporate world within and outside the country (MOH, 2014a). Of note is the number of nutritionists is extremely low. There are 563 nutritionists for a population of 38.6 million and the number keeps on reducing day by day without replacement because of natural attrition and resignations (MOH, 2014a).

A previous study indicated that increased workload due to low staffing levels affect performance (Kilel, 2012). However, another study revealed that staff training is more important in influencing staff performance relative to staffing levels (Maestad *et al*., 2010). Indeed, a study in Uganda revealed that health workers are generally responsive to the needs of their clients further indicating that poor staffing may lead to low job performance (Lutwama *et al., 2012).* Although these studies indicate that staffing levels and training may influence the performance of health workers, there is scarcity of data on how these factors influence performance of nutritionists. Hence this study evaluated how these factors impacts on the performance of nutritionists in clinical settings.

Other than staff shortage, absenteeism also affects performance and workers who do not come on duty lose a substantial number of working hours which may result into low work output (Lindelow *et al.,* 2005). In addition, poor or lack of team work impedes organizational performance (Franco *et al.,* 2002; Gibson, 2000). Therefore, staff availability needed to be

studied a long side staff levels and team work as a predictor of performance. Though it is assumed that these factors may not affect nutritionists' performance it would be necessary to assess task completion against available human resources to establish their endurance.

2.2.4 Staff Motivation

There is an argument that high job motivation lead to high job performance (Ufuophu-Biri and Iwu, 2014). Evidence suggests that apart from staff training and staffing levels, staff motivation and satisfaction greatly influence work performance (Kessuwan and Muenjohn, 2013; Jankingthong and Rurkkum, 2012). In fact, studies have shown that unfairness with reference to factors such as low remunerations, promotion, recognition of work experience, allocation of allowances and access to training as well as human resource management within the work environment cause dissatisfaction among staffs, ultimately resulting into poor performance (Peters *et al.,* 2010; Jacobi, 2010). In support of these observations, improved motivation through provision of local incentives and appropriate handling of workers' expectation in terms of promotions, performance appraisal process and effective communication improves staff motivation which later influence work performance positively (Mbindyo *et al.,* 2009).

A world bank policy research working paper revealed that among the determinants of health workers' motivation, financial remuneration was the most significant determinant of increasing work motivation (Garcia-Prado, 2005; Bennet, 2000). Financial incentive is not the most important determinant in motivating staff to perform better (Neubert, 2007). Moreover, it has been shown that motivation and retention of health workers in developing countries is country

specific (Willis-Shattuck *et al.,* 2008). Therefore, it was critical to understand the motivational factors that influence nutritionists' performance.

2.2.5 Resources Availability

In the current competitive environment, health care managers must have an intense interest in maximizing the resources at hand. Resources which include office equipment, technology, software, physical tools, reporting tools, budget and time has been reported in may studies as organizational factors which affect job performance (Anderson, 2013; Ojukuku and Salami 2012; Nzinga, *et al.*,2009; Willis-Shattuck *et al.,* 2008; Fort and Voltero, 2004). Important to note is the effective and efficient use of resources as a factor which may affect performance as well. Health workers' performance heavily depends on resources; even though researches done assessed health workers collectively it was necessary to evaluate resources as a predictor of performance among nutritionists.

2.2.6 Working Environment

Environmental comfort is categorized into three that is physical comfort, functional comfort and psychological comfort all of which predict performance and depend on each other (Vischer, 2007; Lee and Brand, 2005). Both environmental and functional comfort addresses infrastructural factors and ambiance of an organization. Studies have shown that poor working and living conditions like uncomfortable working station, poor furniture, volatile temperature, poor lighting and inaccessible equipment makes workers feel they are not appreciated and may greatly affect their performance (Qasim *et al.,* 2012; Chandrasekar, 2011; Songstand *et. al.,* 2011; Peters *et al.,* 2010; Mbindyo *et al.,* 2009; Vischer, 2006). Indeed, studies revealed that

human comfort is important in job productivity and that staffs working in a conducive environment perform better (Ismail, 2010; Taiwo, 2009).

More importantly occupational hazards have been cited as a source of demotivation which may affect performance of health workers, (Lundstrom *et al.,* 2002.). In fact, a study in Uganda by Luboga *et al.*, (2011) revealed that private hospitals have better facilities and working conditions as compared to public hospitals which enhance performance. Even though this current study did not make comparison of private and public hospitals, it was important to assess the environmental factors of the different referral hospitals in relation to nutritionists' performance since they have different structural designs and management systems.

Psychological comfort also forms part of the environmental comfort. It entails a feeling of belonging, ownership and control at the work place. The psychological comfort results in higher perceived group cohesiveness, job satisfaction and well-being which may enhance job performance (Vischer, 2006; Lee and Brand, 2005). These psychological factors may also affect nutritionists; therefore, this study sought to establish how they affect nutritionists' performance in Kenya.

2.3. Individual Factors and Performance

2.3.1 Individuals Competency

Studies have shown that job performance depends on many different individual characteristics (Boon *et al.*, 2012; Ayranci, 2011). Even though managers use different techniques to motivate their staffs, individuals are different, and they differ in their willingness and ability to perform,

(Saeed *et al.,* 2013; Boon *et al.,* 2012), suggesting that individual factors may influence performance of nutritionists in Kenya. These characteristics are divided in to inter and intra personal traits which include cognitive ability, teamwork, absenteeism as well as communication among health workers and their patients (Adeoti and Olabode, 2012; Morgeson *et al.,* 2005).

Competency which include knowledge, skill, ability, attitude, behavior or other personal characteristic essential to perform the job or contributes to the success of a job are crucial to performance (Morgeson, 2005). Health workers gain competency through pre-service education, in-service training, workshops and seminars as well as through work experience all of which are expected to enhance performance (Kak, 2001).

Acquired job-related knowledge and skill are closely related to the nature of work which in turn affects staff performance (Wanjau *et al.,* 2012; Saeed *et al.,* 2013). Even though studies have shown that continuous education, training and professional development motivates workers greatly, there was need to evaluate the predictive power of knowledge and skill against performance of nutritionists to inform policy makers on which interventions to focus on to improve nutrition services.

2.3.2 The Role of Age on Job Performance

Studies have mixed opinion on the effect of age as an influencer of job performance (Shaffril, 2010; Lourence, 2010). Shaffril, (2010) reported age as an important determinant of work performance. An individual's job performance does not necessarily suffer just because of advancement in age. In fact, a study by Lourence, (2010) cited positive response to monetary

incentives and performance recognition from older sales representative in a Us retail service company as opposed to younger sales representative which impacted on their performance. Another study looking at factors influencing job performance among teaching staffs of Kota Kinabalu polytechnic in Malaysia, found that older people felt that their organizations treated them well by appreciating their effort, giving higher salaries, not being constrained by strict organization rules which motivate them to perform better (Sharma, 2017).

Although previous studies have shown no effect of age on performance, there seems to be some correlation between reduced job performance and age with respect to certain job tasks as evident in a study among Subway worker in Kore (Kim & Kim, 2008). The study clearly reveled that as employees grow older their physical and mental ability tends to decline which may affect output. Anumaka and Ssemugenyi (2013) while studying the relationship between gender and work productivity of academic staffs in selected private universities in Uganda also established that there is a link between age and job performance a factor which may affect nutritionists in clinical setting as well.

2.3.3 The Role of Gender on Performance

Studies have shown that there is no difference in job performance and motivation between men and women and that women were as able as men if given the same exposure (Ufuophu-Biri and Cyprian & Iwu, 2014; Persson, 2010; Ogunleye, 2006;). In fact, technology has increased women's ability even among male dominated jobs (ibid). In support of the studies a cross sectional study examining national representative data of hospitalized Medicare beneficiaries, reported that patients treated by female physicians had significantly lower mortality and

readmission rate as compared to those cared for by the male physicians within the same hospital (Tsugawa *et al.*, 2017).

Even though studies cited no difference in job performance between women and men, Hassan and Ogunkoya (2014) in their study viewed performance in terms of physical strength and rated men better in performance since they were seen to have more strength than women. Okpara *et al*., (2005) cited gender difference in the perceptions of organizational values which affect job performance. The study revealed that men draw more satisfaction from organizational factors such as remuneration, promotion and attitude of one's supervisor whereas job satisfaction of women employee was found to be more affected by co-workers and working condition.

On the other hand, Green *et al*., (2009) reported that there are significant gender-based differences in performance on various dimensions such as women earning less for the same job performed which may demoralize and affect their job performance negatively. Though it is assumed that gender differences may not affect nutritionists' performance it would be necessary to assess them against job performance.

2.3.4 Education Level

Most organizations use education as a measure of suitability, person's skill level and productivity which may be deceiving. Hiring highly educated workers requires that the managers consider other human resource issues like experience which was cited to be a better predictor of performance by Avolio *et al.*, (1990).

A study by Thomas and Feldman (2009) in United States of America, which looked at education level on job performance, found out that, other than positively influencing performance, education level not only influenced creativity and citizenship behavior positively but had a negative relationship to on-the-job substance abuse and absenteeism. Contrary to the study Cyprian & Ugwu, (2017) cited age, education, job position and work experience as predictors of job performance of librarians in South East Nigeria. Education was reported as being the most significant predictor of job performance in that study. Even though the study cited education as having meaningful relationship with performance, it does not mean that hiring a highly educated individual will ensure best performance and this may be the same in nutrition care, therefore a study to establish how education level job performance influences was necessary.

2.3.5 Mental Ability and Performance

Another individual factor which is reported to influence performance is mental ability which relates to the general intelligence or specific requirements such as special problem solving (Saeed *el al.,* 2013). To show the magnitude of psychological problem on job performance a report by the National Institute of Mental Health, states that mental conditions such as depression account for close to USD 12 billion in lost work days each year. More than USD 11 billion is also lost from decreased productivity due to symptoms that weaken energy, affect work habit and cause problems with concentration, memory and decision making (Lerner & Henke, 2008). There is evidence that employees' perception about their work and emotional stability influences their performance (Awadh, 2011; Mtengezo, 2008; Mount *et al.,* 2006; Colbert *et al.*, 2004). Hence there was need to establish how these individual factors influenced performance of nutritionists.

2.3.6 Team Work

Studies have shown that team work is associated with better healthcare and rewarding professional experience which enhances job performance (Kelly & Thomas ,2013; Rypkema, 2004). lack of team work impedes performance (Crogan *et al*., 2001). Effective teamwork and communication is critical for the safe delivery of healthcare (Sneve *et al.,* 2008). Another study in USA at Sanford children's hospital found out that there was improved nutrition outcome of low birth weight infants in a neonatal intensive unit because of multidisciplinary team work. Though team work enhances performance a study by Anneke *et al.,* (2016) noted that it is not easy for health workers to foster teamwork. With staff shortage at the three teaching and referral hospitals in Kenya it is assumed that teamwork helps nutritionists to provide quality nutrition care a factor that needs to be verified.

2.4 Social Factors

Social factors are markers that distinguish major differences between groups of people in each society. Bennett and Franco's (1999) frame work emphasizes that other than internal factors, there are many other complex factors that significantly influence motivation of workers. These factors include community expectation, peer pressure or social values of health workers.

Health care is practiced in a social and cultural context which inevitably interact with human biology to impact health (Armenakis, 2007). This interaction of factors determines a person's experience and definition of health and illness. Naturally, social issues are never left at home but are usually dragged to work places, meaning a lot of hours are spent pondering over these issues which eventually interfere with job performance (ibid).

Health care providers are also subjected to the same confluence of factors (Armenakis, 2007). Thus, for a health worker to be effective they must understand social factors which may influence their patients. Following these studies there is evidence that social factor influences job performance of workers in different organizations and there is need to determine social factors which influence performance of nutritionists.

2.4.1 Marital and Relationships

The state of being married or unmarried is termed as marital status which may influence job performance of an employee (Jordan & Zilek, 2012). Marriage and relationships can be considered as major factors affecting employee's performance in an organization (kjadoon, 2016; Van der Merwe, 2008). Judge and Cable (2004) found out that social factors such as marital and family issues, financial and illness may cause mental instability which can influence job performance. Contrary to the fact that marriage may cause mental instability Jordan and Zilek (2012), found that women who were employed and had family roles had better physical and mental health which promoted better job performance than their single counterparts. Since relationships have been reported to affect performance the same factors may influence performance of nutritionists and needs to be established.

2.4.2 Peer Pressure

Peer pressure occurs when a peer group exerts influence to persuade an individual to change their attitude, values and their behaviors so that they meet group norm (Wood, 2017). While peer pressure may have had a negative connotation when you were in high school, at work place it can motivate one to perform at their highest level. Group competition can spur peer pressure -

motivated action from staffs (Falk & Ichino, 2016). For example, if a patient's outcome depends on each health workers contribution then they would push each other to achieve the expected outcome.

Peer pressure is said to be a strong motivating force than financial reward. Sense of belonging and attachment to a group of colleagues is a better motivation for someone than money (ibid). Employees influence the productivity of their co-workers, with peer pressure playing a significant role in how well employees perform. A study by Wood (2017), found that presence of high performing co-workers can make an individual improve his performance. This means that when surrounded by high- achieving colleagues, employees are more likely to perform better because they feel pressured to measure up to their co-workers.

Wood (2017), also reported less social pressure in high-skilled occupation compared to low-skilled meaning high-skilled occupation has staffs who are self-motivated unlike low-skilled occupation. Nutrition care being high-skilled it would be important to find out if they are less influence with peer pressure.

2.4.3 Community and Patients' Expectations

The rule of expectation uses expectation to influence reality and create results (Maxwell & Dorman, 1999). Individuals tend to make decisions based on how others expect them to perform. As result people fulfill these expectations whether positive or negatively. Expectation has a powerful impact on those we trust and respect, but interestingly an even greater impact on strangers (ibid). When someone has elevated expectations of you, they bring you to certain level

which may influence your performance greatly. To support this statement a study by Ozcan (2016), while studying effect of expectation on performance revealed that the performance of an employee in an organization greatly depend on the expectations set for them.

To appreciate the community's expectation in improving health care services, CARE international have used community score cards as a tool to express community's expectation to health workers performance (Berlan & Shiffman, 2011). In support Falk & Ichino (2016) , realized that patients' perspectives are important in assessing health care and suggest potential areas which need improvement, and this follows the community score card concept.

2.4.4 Illness of Family Member

When a serious illness or disability strikes a person, the family is affected by the disease process and by the entire health care experience (Lerner & Henke, 2008). Illness may cause additional strain because of economic problems and interruption in career development, a factor which may influence job performance of an individual (Gouvernement de Quebec, 2007). In support of that study Wittenberg *et al*., (2012) while studying how illness affects family members reported that, family members experienced psychological and non-health effect from having an ill relative. To show the magnitude of psychological problem on job performance a report by the National Institute of Mental Health, states that the mental condition such as depression accounts for close to USD 12 billion in lost work days each year. More than USD 11 billion is also lost from decreased productivity due to symptoms that weaken energy, affect work habit and cause problems with concentration, memory and decision making (Lerner & Henke,2008).

2.4.5 Financial Ability

Even through economic turmoil there are two factors which influence employees' motivation which may influence the performance of nutritionists as well. The factors are financial and non-financial factors (Dielman *et al.,* 2009). Financial reward is considered as the most important managerial tool for managers to motivate employees (Danish & Usman, 2010). Consistent with the previous findings a study by Shaffril (2010) in Malaysia concluded that education and salary are the main contributors to high performance. In support of the study Arumugam and Seng (2017), also cited financial reward to play a key role on employee performance. A study in Accra, Ghana by Bonam (2011), noted that the effect of poor monetary motivation on work performance were absenteeism, low output and high labor turnover.

Financial stress is one of the major factors affecting employee performance (Kjadoon, 2016). They may include problems such as unexpected accidents or any incident may reduce the productivity rate of an employee (ibid). Indeed, these studies indicate that financial factors are important determinants of workers' performance, there is limited data assessing whether they influence performance of nutritionists. Hence this study purposed to establish if these factors influenced the performance of nutritionists in clinical settings in Kenya.

2.5 Conceptual Framework

According to literature, many factors strongly affect job performance. The interconnection between social, individual and organizational factors has been recognized as a dimension of performance. To guide this study both Bennett and Franco's (1999) conceptual frame work and

the model of Sharpley (2002) was used as the theoretical base. It was named job performance model as illustrated in Figure 2.1.

Bennett and Franco's (1999) proposed a conceptual framework which had an interaction between work motivation, performance and organizational factors within the health sector environment where clinical nutrition is practiced. The dependent factors which were considered in the model were grouped into three. They included social and cultural factors which included community expectation, peer pressure, cultural beliefs and social value, financial ability and family illness. The social factors were expected to affect staff motivation. The individual factors included demographic characteristic, provider competency and provider motivation. Whereas the organizational factors included issues of managers support and performance management, commitment by the organization to achieve the set goals

Organizational culture, norms and standards used at work, staff development and communication mechanism. Sharpley's (2002) proposed a model that identified individual perception, work experience and work outcome as the most crucial factors affecting the intervention of health workers. In addition, the organizational factors such as managerial support, colleague support and organizational culture were associated with high performance. Therefore, interventions depend on all these factors as well as overall attitude and commitment by the organization to achieve the set goals.

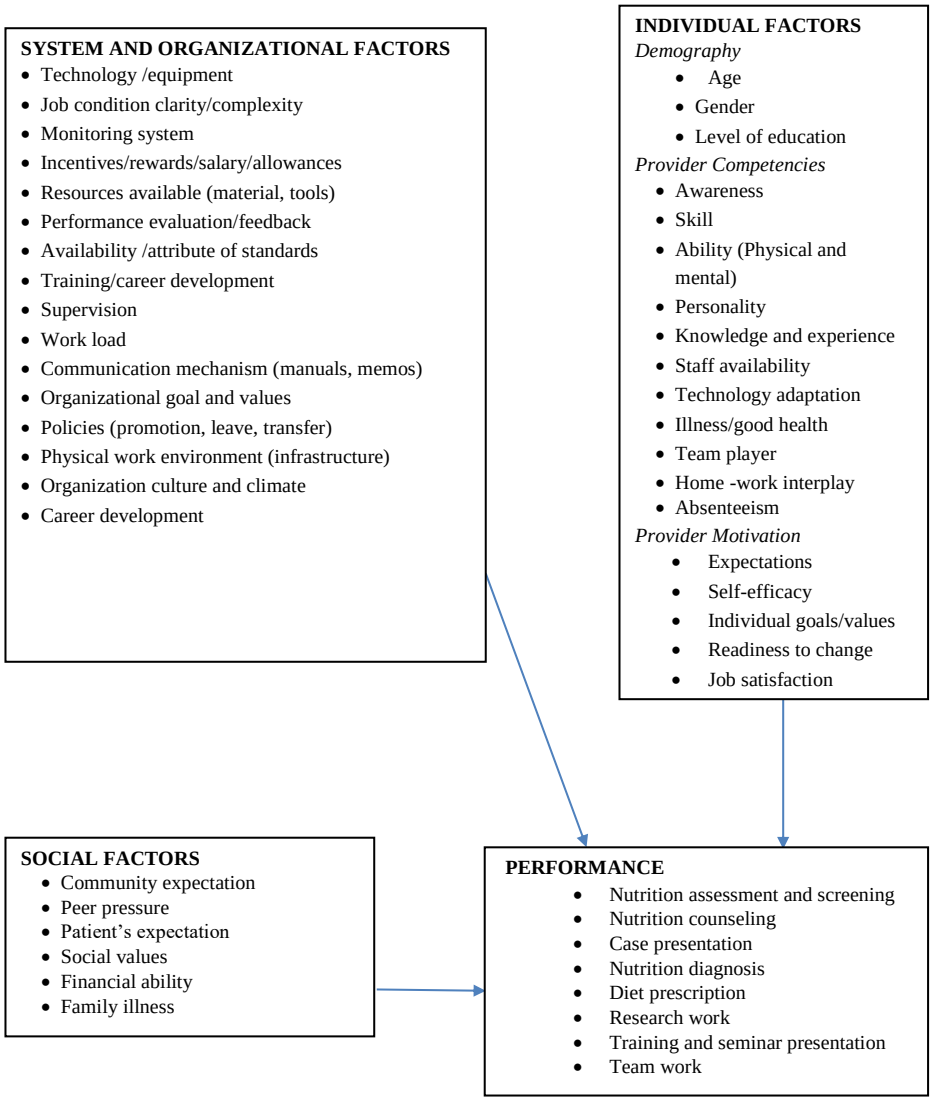


Figure 2.1 Job Performance Model (Sharpley, 2002; Bannett & Franco, 1999)

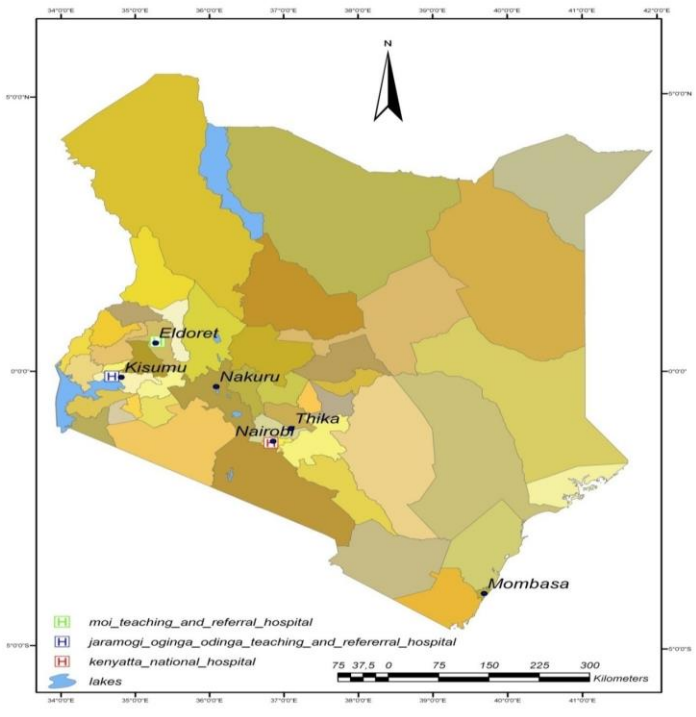
CHAPTER THREE

METHODOLOGY

3.1 Study Setting

There are five teaching and referral hospitals in Kenya namely Kenyatta National Hospital, Moi Teaching and Referral Hospital, Kisii Level Five Hospital, Coast General Hospital and Jaramogi Ogina Odinga Teaching and Referral Hospital (Kenya Medical Directory, 2015)

Figure 3.1: Map Showing the Study Sites



KNH:-	**MTRH:-**	**JOOTRH:-**
Lat: 1^0 18' 3.6462"	**Lat:- 0^0 17' 23.8164**	**Lat:- 0^0 17' 23.8164"**
Long: 36^0 48' 25.8984"	**Long: 36^0 3' 59.4972**	**Long: 36^0 3' 59.4972"**

The selected hospitals are national hospitals which are accredited by Kenya Nutritionist and Dieticians Institute (KNDI) as sites to offer clinical nutrition. Other than being clinical nutrition accredited site, the hospitals also have specialized medical care making them the best sites for this study.

The hospitals offer an array of diagnostic services such as laboratories, radiology/imaging, and endoscopy among others. Also available at the hospitals are services such as maternal child health (MCH), antiretroviral therapy, basic emergency obstetric care, caesarean section, comprehensive emergency obstetric care, curative in-patient services, curative out-patient services, family planning, growth Monitoring and promotion, HIV counseling and testing (HTC), immunization, Prevention of Mother to Child Transmission of HIV, radiology services (e.g. X-ray, ultra-scan, and magnetic resonance imaging), Rural Health Training Centre/Rural Health demonstration center, tuberculosis diagnosis, tuberculosis laboratories, tuberculosis treatments and youth friendly services.

Nutrition as discipline plays a key role in patient management in these teaching and referral hospitals. The bed occupancy of these hospitals surpasses their bed capacity by over three folds. Kenyatta National Hospital being the largest referral hospital in Kenya has 50 wards, with a bed capacity of 1,800 of these 209 beds is for private wing. Even though the bed capacity is 1,800 the hospital has average bed occupancy of between 2,500 and 3,000 patients. On average Kenyatta National Hospital receives over 80,000 in-patients and over 500,000 out-patients annually. Jaramogi Oginga Odinga Teaching and referral hospital receives an average of 1068 in-patient per month with a bed capacity of 457. It also receives 13,204 out patients per month. Moi

Teaching and Referral Hospital on the other hand has a bed capacity of 434, but it receives 2980 in-patients per month and an average of 11417 out-patients. This explains the high workload at the referral hospitals.

3.2 Study Design

This was a cross-sectional study in which quantitative data was collected within a predetermined period and analyzed.

3.2 Study Population

The study population included all nutritionists working in the sampled hospitals according to the staff establishment list. The total number of nutritionists working at Kenyatta National Hospital was forty-four (44), while those at Jaramogi Oginga Odinga Teaching and Referral were two (2) and Moi Teaching and Referral Hospital have fifty-seven (57) making a total of one hundred and three (103) nutritionists.

3.2.1 Inclusion Criteria

All nutritionists working at the three teaching and referral hospitals were included in the study.

3.2.2 Exclusion Criteria

Any eligible nutritionists who for one reason or another was unable to participate in the study.

3.3 Sample Size Determination

A census of all the nutritionists of one hundred and three (103) was used.

3.4 Data Collection Instrument

A total of ten enumerators and three data clerks were taken through a three - day training on how to collect data using a structured questionnaire (Appendix 3).

3.5 Data collection Procedures

They also did an online research ethics training prior to data collection. An enumerator was required to be a holder of Kenya Certificate of Secondary Education with minimum aggregate performance of C- or "O" level certificate Division III. Other than training the data collection team the researcher supervised the entire study exercise and guided the process of data collection. The enumerators read out a written consent form to the respondents seeking their approval to take part in the study. On agreement to take part in the study, the respondents had to append their signature as a proof of consent.

The questionnaires included variables to measure individual, system and organizational factors as well as social factors which influence work performance. The variables outlined above were measured as follows:

Performance: A range of responses were provided to a given question /statement scaled along a continuum of 5-point Likert's scale ranging from excellent (1) to very poor (5) for the key competencies of performance. Such competency areas included nutrition assessment and screening, nutrition diagnosis, nutrition education and counseling, diet prescription and provision of alternative feeding methods. Job performance was measure by perception of the nutritionists.

System and organizational factors: A range of responses were provided to a given question statement scaled along a continuum of 5-point Likert's scale ranging from strongly disagreed (1) to not agreed (5). The recommendation included areas like technology/equipment, job description, monitoring system, incentives, resources available, performance evaluation/ feedback, availability/attribute of standards, training/career development, supervision, workload, communication mechanism, organizational goal, policies, goals and values, physical work environment, organization culture and climate and career development.

Individual factors: A range of responses were provided to a given question statement scaled along a continuum of 5-point Likert's scale ranging from strongly disagree (1) to strongly agreed (5). The factors included awareness, age and marital status, gender, skill, ability, personality, knowledge and experience, staff availability, technology adaptation, illness/good health, team player, expectations, self-efficacy, individual goals/values, readiness to change, job satisfaction and home -work interplay.

Social factors: The societal factors assessed included community members' values and perception about nutritional care in the hospitals as well as staff interpersonal relationship. A range of responses were provided to a given question statement scaled along a continuum of 5-point Likert's scale ranging from strongly disagreed (1) to not agreed (5). Such recommendations included community expectation, peer pressure, patient's expectation, social values, and financial ability and illness core family members.

3.6 Pilot Study

Immediately after ethical approval pilot study was carry out one month before the actual study. Burns and Grove (2003), defines pilot study as a smaller version of a proposed study and is conducted to refine the methodology. The pilot study allows the research to test the prospective study and is done on a smaller number of people having similar characteristic of the target respondents. The pilot study helps to identify problems in the proposed study and allows the researcher to adjust the instrument and the methodology before the actual study (De Vos *et al.*, 2005). A request letter to carryout pilot study was sent to Kisii Level Five Hospital and Coast General Hospital. With a positive reply from Coast General Hospital the researcher piloted the research tools at Coast general hospital one month prior the actual study. The respondents were asked to give constructive feedback with regards to clarity of the questions, comprehensiveness and time required to finish the interview. They experienced no difficulty in answering the questions. They pointed out that the interview took between 15 and 20 minutes.

During the pilot study the instrument was subjected to statistical validity and reliability test. Validity ensures the ability of the scale to measure the intended concept (Sekaram, 2003). The instrument was subjected to both construct and content validity tests. Construct validity tested was conducted based on principal component technique for measuring unidimensional. The instrument revealed good level of unidimensional at communality (0.6).

Content validity was assessed by the study supervisors as experts and re-assured by previous outcomes from various studies from the literature review. Reliability of the variables was measured using Cronbach's coefficient alpha. The Cronbach's alpha value equal to or more than 0.7 indicated that the items were reliable and considered good but < 0.6 were weak following the

rule. The reliability coefficient of the questionnaire was calculated by Cronbach's alpha and estimated to be 0.87 (Wood & Haber, 2013). In all statistical analysis the p-value less than 0.05 was significant.

3.7 Data Analysis

Data analysis was done at two levels. Performance factors were grouped with the independent variables of interest and subjected to factor analysis. System and organizational factors, individual factors and social factors were also subjected to factor analysis. They were then subjected to scree test and components that had an Eigen value of 1 or greater were retained (Kaiser, 1960). To transform the values for easy interpretation a rotation matrix was then done on the selected variables.

Cronbach's alpha test was done to determine whether the variables had significant value in the model. Variables that reduced the power of the model were dropped. Significant variables were subjected to factor analysis as illustrated above excluding the Cronbach's alpha test. Variable reduction was done through principal axis analysis and a single dependent variable was generated. Step wise regression analysis was then done whereby multivariate analysis was done and variables that had a $p< 0.05$ considered to be statistical significance.

3.8 Ethical Considerations

The researcher sought authority to conduct research from Maseno University Graduate School. Ethical approval was sought from Maseno University Ethical Review Board (Appendix 3), Jaramogi Oginga Odinga Teaching and Referral Hospital Ethical Review Committee (Appendix 4), Kenyatta National Hospital/University of Nairobi Ethical Review Committee (Appendix 5) and Moi University College/Moi Teaching and Referral Hospital Institutional Research and Ethics Committee (IREC)[Appendix 6] prior to data collection.

Informed consent (Appendix 3) was sought from the nutritionists, who were briefed on the research procedures and assured of confidentiality. Respondents were not coerced into giving information but were requested to participate voluntarily. Anonymity was assured by concealing identity of the participants and using unique numbers as identifiers in the questionnaire. All the information provided remained confidential and was only reported as group data with no identifying information. Similarly, all filled data collection tools were kept in a secure place and only the people directly involved with the research had access to them. After successful completion of the study all data, both soft and hard copies were destroyed by shredding and crashing. A copy of the study report was sent to the respective study sites.

CHAPTER FOUR

RESULTS

4.1 Participant Characteristics

A total of 103 nutritionists were targeted to participants in this study out of which 9 did not take part. Out of the 103 nutritionists 4 refused to participate in the study while 6 were away on study leave. To understand the study population a brief personal profile of the respondents was provided. Of the 103 eligible nutritionists 94 were interviewed giving a response rate of 91.3%. The nutritionists who were not interview were either absent during data collection period or declined to take part. Majority of the respondents were married 74.47% and female 78.7%. The study population had a mean age of 38.4 years, with about 39.4 % being above 40 years of age. More than half the respondents 58.5% had working experience of over 10 years with only 20.2% serving on contract basis. Moi Teaching and Referral Hospital had the highest staffing level of 55.3%. In pursuant to education level, important to note was the high education level among the respond, 68.1% being university graduates with only 1.1 % having certificate in community nutrition as described Table 4.1.

Table 4. 1 Demographic Results

Variable	Frequency (n)	Percent (%)
Gender		
Male	20	21.28
Female	74	78.72
Age(years)		
25-30	22	23.4
31-40	35	37.23
> 40	37	39.36
Professional Qualification		
Certificate	1	1.06
Diploma	29	30.85
Degree	64	68.09
Marital Status		
Single	20	21.28
Married	70	74.47
Widow/Widower	4	4.26
Employment status		
Permanent	75	79.79
Contract	19	20.21
Work Experience (years)		
< 1	10	10.64
1-5	29	30.85
> 10	55	58.51

4.2 Performance Factor

To assess the nature of perceived performance of nutritionists in the three referral hospitals, nine indicators in the actual practice of nutritionists were subjected to principal axis factor. In the preliminary each indicator was tested for sample adequacy to allow for further analysis, in normal factoring processes. This test was based on KMO and Bartlett's test of sphericity. The results indicated adequate sample size (KMO= 0.836, $\chi^2 = 324.3$, $df = 36$, $p<0.05$).

Further analyses to demonstrate perceived performance revealed that three categories of perceived performance were exhibited inform of factors outputs accounting for variance of 55.77%. The first factor which consist of nutrition assessment and screening, nutrition diagnosis, case presentation, diet prescription and provision of alternative feeding accounted for 41.86% followed by factor two which comprised of research work and training as well as seminar presentation accounted for 7.41% and the third factor which consisted of nutrition counseling accounted for 6.51%. It appears that factor one consisted of items that clearly defines nutrition care process. Factor two focused on the aspects of training and capacity building, whereas factor three focused on behavior change communication. This therefore means that nutrition care process forms the key performance area as shown in the Table 4.2. The performance domains that were below 10 percent variance accountability in the rotated matrix were dropped at this level.

Table 4. 2 Rotated Factor Matrix Showing Different Performance

Indicator	Factor		
	1	2	3
Nutrition assessment & screening	.678		
Nutrition diagnosis	.689		
Case presentation	.777		
Diet prescription	.816		
Nutritional counseling			.832
Research work		.674	
Training& seminar/presentation		.646	
Provision of alternative feeding methods	645		
Team work/co-operation			
Variance explained	41.86%	7.41%	6.51%

4.3 System and Organizational Factors influencing performance

To determine system and organizational factors that predict perceived performance fifteen variables were subjected to principal axis factor analysis. All the indicators were subjected to sample adequacy test KMO and Bartlett's test of sphericity. The results revealed that the sample size was adequate (KMO = 0.72, $\chi^2 = 319.2$, df = 105, $p < 0.05$).

Further analysis to determine which indicator predicted perceived performance revealed that there were five factors extracted accounting for variance of 62.36%. The first factor which included job condition, incentives, rewards and salaries, work load, policies, communication mechanism as well as organizational culture and climate accounted for 24.4% of variance. This factor defined staff motivation. Factor two which included support supervision, performance evaluation and feedback, infrastructure and organizational goals and values accounted for variance of 13.15%. It defined performance appraisal of the organizations. The third factor which accounted for 10.2% included performance evaluation, resource availability, training and career

development explained capacity building. The fourth factor included availability of attributes and standards accounting for variance of 8%. It explained policies governing the organization. Lastly the fifth factor accounted for variance of 6.9%. It included technology or equipment and organizational culture and climate attributing more to the leadership style of the study sites. This is illustrated in Table 4.3.

Table 4. 3 Rotated Factor Matrix Showing Measures of System and Organization Factors

Indicators	**Factor**				
	1	2	3	4	5
Technology/equipment					.497
Job condition clarity/complexity	.572				
Supportive supervision/monitoring		.653			
Incentives, rewards/salary	.487				
Performance evaluation/feedback		.489	.502		
Resources available			.609		
Availability/attribute of standards				.834	
Training/career development			.744		
Work load	.470				
Org. goals &values		.615			
Policies	.559				
Communication mechanisms	.561				
Infrastructure		.623			
Org. culture & climate	.519				-.641
Newly created departments					
Variance explained	24.4%	13.15%.	10.2%	8%.	6.9%.

The critical factors that emerged as key measures of systems and organization factors were then related to the nutrition care process performance level Batt-score to determine the level most critical factors in the relationship. The results revealed no significant relationship between all the indicators with performance based on t-test for *beta*-values ($p>0.05$) as shown in Table 4.4. This

implies that as much as organizational factors were perceived by the participants as key in service performance, such factors did not matter critically on actual derived performance.

Table 4. 4 Relationship between Systems and Organization Factors and Nutrition Care Process Level of Performance

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	.546	1.027		.531	.597
	Supportive supervision/monitoring	.186	.127	.173	1.468	.146
	Incentives rewards/salary	.000	.133	.000	-.001	.999
	Performance evaluation/feedback	-.049	.165	-.038	-.298	.767
	Resources available	.012	.161	.009	.073	.942
	Availability/attribute of standards	-.188	.150	-.147	-1.254	.213
	Training/career development	-.027	.174	-.021	-.156	.876
	Technology/equipment	-.054	.142	-.042	-.381	.704

4.4 Individual Factors Influencing Performance

To determine individual factors that predict performance seventeen indicators were subjected to principal axis factor analysis. The indicators were divide into three that is demography, provider competency and provider motivation. They were first subjected to sample adequacy test KMO and Bartlett's test of sphericity. The results revealed that the sample size was adequate (KMO= 0.635, χ^2 =486.6, df =136, $p<0.05$).

Subsequent analysis using Principal axis factor analysis to determine individual factors which predict perceived performance extracted five factors out of the seventeen indicators. The factors accounted for variance of 61.7%. The first factor consisted of staff availability, expectations, individual goals and values and readiness to change accounted for variance of 22.7%. The factors defined the nutritionist motivation. The second factor which accounted for variance of 11.99%

comprised of personality, awareness and knowledge and experience explained the competency of the nutritionists. The third factor accounted for variance of 11.39% and it included team player and home-work interplay. This explained the nutritionists' intra personal trait. The fourth factor which explained staff attitude accounted for variance of 8.5% whereas the last factor accounted for 7.1%. It included personality and technology adaptation which defined mental ability as shown in Table 4.5.

Table 4. 5 Rotated Factor Matrix Showing Measures of Individual Factors

	Factor				
	1	2	3	4	5
Personality		.467			.735
Skill & ability					
Awareness		.802			
Knowledge & experience		.716			
Staff attitude				.774	
Staff availability	.428				
Technology adaptation					.534
Illness/good health					
Team player			.770		
Homework interplay			.463		
Expectations	.850				
Self-efficacy					
Individual goals/values	.778				
Readiness to change	.629				
Job satisfaction					
Variance explained	22.7	11.99%	11.39%	8.5%	7.1%.

Individual factors that emerged as key predictors were further subjected to regression analysis against nutrition care process performance level Batt-score to determine for the best predictor of perceived performance. The results revealed no significant relationship between all the indicator and performance based on t-test *beta*-value ($p>0.05$) as shown in Table 4.6. This therefore means

that as much as some individual factors emerged key influencers of performance their relationships with actual perceived performance were not significant.

Table 4. 6 Relationship between Individual Factors and Nutrition Care Process Level of Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Indicator	(Constant)	.102	.772		.132	.895
	Personality	.074	.074	.116	1.001	.319
	Awareness	.164	.111	.197	1.478	.143
	Staff Availability	.105	.145	.081	.720	.473
	Team Player	-.083	.116	-.082	-.715	.477
	Knowledge & Experience	-.247	.146	-.226	-1.687	.095

While assessing for factors that influence nutritionists' performance, qualification level as a confounder was subjected to regression analysis against nutrition care process performance level Batt-score. The results revealed no significant relationship between education level and perceived performance based on t-test for *beta*-value ($\beta = 0.112$, $t = 1.080$, $p > 0.05$). This therefore means that there is no relationship between education level actual performance of nutritionists.

4.5 Social Factors influencing Performance

To determine social factors that predict perceived performance six indicators were examined. Preliminarily all the indicators were subjected to sample adequacy which revealed that the sample size was adequate with KMO test and Bartlett's test for sphericity passing the test. The results revealed were (KMO=0.738, χ^2 =156.9, df =15, p<0.05).

Each indicator was further subjected to principal axis factor analysis and only two factors were explained. Further analysis to demonstrate the specification of the social factors explained that they were categorized into social and economic factors. Factor one comprised of community expectation, financial ability and social values, patient's expectation and peer pressure. It accounts for variance of 40.79%. The second factor which consisted of illness of a family member and financial ability accounted for variance of 7.94 %. The factors both accounted for 48.73% as shown in Table 4.7.

Table 4.7: Rotated Factor Matrix Showing Measures of Social Factors

	Factor	
	1	2
Community expectation	.721	
Illness (family members)		.403
Financial ability	.509	.766
Social values	.644	
Patient's expectations	.724	
Peer pressure	.588	
Variance explained	40.79%	7.94%

Social factors that emerged as key predictors were further subjected to regression analysis against nutrition care process performance level Batt-score to determine best predictor of performance. The results revealed significant relationship between the indicators with

performance based on the t-test for beta-value ($p < 0.05$) as indicated in table 4.8. This there for means that social factors were the best predictors of perceived performance.

Table 4. 8 Relationship between Social Factors and Nutrition Care Process Level of Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Indicators	(Constant)	.096	.592		.162	.872
	Community expectation	-.224	.097	-.306	-2.312	.023
	Financial ability	-.055	.099	-.077	-.550	.584
	Social values	.117	.103	.155	1.136	.259
	Patient's expectations	-.015	.096	-.020	-.154	.878
	Peer pressure	.222	.079	.349	2.815	.006
	Illness (family members)	-.014	.125	-.012	-.111	.912

CHAPTER FIVE

DISCUSSION

5.1 Performance

Previous studies have shown that quality assurance in health system is dependent on the performance of workforce according to standards that are in line with the mission and goal of the organization (WHO, 2006; Marquez, 2001). Kondrup *et al.,* (2003) outline nutrition care process as a method to manage nutrition care activities. The process which is a systematic approach to provide high quality nutrition care is also outlined in the clinical nutrition and dietetic guideline which is used in Kenya (MOH, 2014). It consists of four interrelated steps namely nutrition assessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation (Porter *et al.,* 2015).

The performance of nutritionists from the three teaching and referral hospitals was determined. This study found that nutritionists had average performance as evident by the results of 55.88% variance. The performance was defined in three categories which included nutrition care process, training and behavior change communication. The respondents believed they performed well in nutrition care process accounting for 41.86% of variance, a method used to assess nutrition activities (Kondrup *et al.,* 2003). Quality nutrition and dietetics practice follows four steps as outlined in nutrition care process (Charney & Malone, 2002). They include nutrition assessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation (ibid).

Nutrition assessment is the first step in nutrition care process. it involves gathering data on dietary intake, nutrition related consequences of health and disease conditions, psycho-social, functional and behavior factor (Lacey & Prichett, 2003). Nutrition assessment compares the client's or patient's measurements to relevant standards and identifies possible problem area (Rolfe & Sanson, 2002). The results revealed that nutrition assessment reported satisfactory performance in nutrition assessment as depicted in table 4.2. This may be attributed to the many years of job experience where more than half the nutritionists had work experience of more than ten years.

Nutrition diagnosis is the second step in nutrition care process (Nutrition Diagnosis Snapshot, 2009). Nutrition diagnosis identifies nutrition problem that a nutritionist is responsible for treating independently and informs nutrition intervention follows (Lim *et al.,* (2014). It is reported as the most unfamiliar component of nutrition care process among nutritionist since they were previously never considered able to make diagnosis (Lacey & Prichett, 2003). However, the nutritionists at the teaching and referral hospitals proved this statement wrong since the reported nutrition diagnosis as element of nutrition care process.

Nutrition intervention is a purposefully planned action intended to positively change a nutrition-related behavior, environmental condition or aspects of health status for the patient including his/her family members or caregiver as well as the entire community (Kondrup *et al*, 2003; Charney & Malone, 2002). For quality nutrition care the nutritionist's competency in offering nutrition interventions was assessed. The nutritionists reported superior performance in diet

prescription, case presentation and provision of alternative feeding which are elements of nutrition intervention. Also forming part of nutrition intervention was nutrition counseling. Nutrition intervention chosen by the nutritionist is based on nutrition diagnosis and uses team work and science based principles (Mahan & Escott-Stump,2008). Research and clinical practice are united in their commitment to providing the best of psychological knowledge and methods to improve the quality of patient care. Though research is critical in improving quality of patients care as cited by Kazdin (2008), nutritionists reported deficient performance in this domain as evident by a 7.4% of variance. This therefore means that interventions targeting evidence-based practice which is research work need to be enhanced to improve the nutritionists' overall performance. To support this Mogre *et al.,* (2016) found out that it is important to move education from nutrition care beyond the simple acquisition of knowledge.

This is the last step in nutrition care process (Calhoun *et al.,* 2010). It is used to determine the progress being made towards achieving the desired goal in terms of nutrition care. Monitoring requires measuring and recording the appropriate outcome indicators which are relevant to nutrition. Evaluation on the other hand is the systematic comparison of the present nutritional status of the patient or client with previous status and reference standards (Leidys *et al*., 2010). Nutrition monitoring and evaluation is done throughout the time the patient is in the hospital and is used to decide on discharge plan.

5.2 System and Organization Factors in Relation to Performance

Other than assessing perceived performance of the nutritionists, factors which influence their performance were assessed and the results of the study indicated that system and organizational

factors influence perceived performance of nutritionists accounting for variance of 62.36%. The study results indicated that system and organizational factors which included job condition, incentives, rewards and salaries, work load, policies, communication mechanism as well as organizational culture and climate were perceived to influence performance of the nutritionists. Of significance, other studies have shown that fairness regarding factors such as low remunerations, nutritional policies, communication mechanism as well as organizational culture and climate cause dissatisfaction among staffs, ultimately resulting into poor performance (Jocabi, 2010 & Peters *et al.,* 2010).

In addition, this study also found that support supervision, performance evaluation and feedback, infrastructure, organizational goals and values which describe performance appraisal also seemed to influence perceived performance of nutritionists. In support of these observations, improved motivation through provision of local incentives and appropriate handling of workers' expectation in terms of promotions, performance appraisal process and effective communication improves staff motivation which later influence work performance positively (Mbindyo *et al.*, 2009).

The study also revealed that organizational factors such as performance evaluation, resource availability, training and career development influenced performance of nutritionists though they only accounted for 10.2% of variance. These data are supported by previous data indicating that structural and organizational factors are important in improving performance of employees (Underdown, 2003). This therefore means that organizational structure can inhibit or promote performance of nutritionists depending on how good it is. More importantly this study also

revealed that nutritionists believed that availability of attributes and standards which explain policies governing the organization improved their performance.

Earlier studies also revealed that decentralized structures are more appropriate for nutrition care services as it allows for distribution of decision making, power and some degree of independence (Hao *et al*., 2012). Although this study did not look at whether these referral hospitals had decentralized organizational structure, nutritionists are few in the country and in most cases, they make decisions on their own leading to a decentralized organizational structure. This may lead to the nutritionists feeling valued thus enhancing their performance.

Lastly the results found out that leadership style also affect perceived performance of nutritionist. This agrees with a previous study that showed efficient service delivery and enhanced performance depend on effective supervision (Hao *et al*., 2012). Though key system and organizational factors emerged as predictors of perceived performance, results revealed that they had no significant relationship when related to nutrition care process based on t-test beta-value ($p>0.05$). This meant that system and organizational factors are not the best predictors of actual performance among the nutritionists.

Important to note, studies have revealed that there is a global crisis in the health workforce due to acute shortages of health workers especially in third world countries like Kenya that has negatively impacted on performance of health workers (Bangdiwala, 2010: WHO, 2010). Of significance, the number of nutritionists is extremely low, with records showing that there are only 563 nutritionists for a population of 38.6 million (MOH, 2014). Moreover, this number

keeps on reducing day by day without replacement because of natural attrition and resignations making nutrition staffing a concern in Kenya. Though the staffing levels are very low as compared to the human resource for health norms and standards, there is no scientific significant on relation to nutrition care process based on t-test for beta-value ($p>0.05$).

Just like the system and organizational factor, individual factors that were seen to predict perceived performance were not predictive of actual performance on relation to nutrition care process based on t-test beta-value ($p>0.05$). This means that elevated level of qualification has little or no influence on job performance. The relationship between knowledge and experience with perceived performance could be attributed to the fact that more than half the respondents 55 (58.5%) had many years of work experience. This may therefore explain th.e importance of work experience on job performance as supported by result in other studies.

5.3 Individual Factors in Relation to Performance

Studies have shown that individual factors influence job performance and individuals differ in their willingness and ability to perform (Boon *et al*., 2013; Saeed *et al*., 2013). This study revealed that individual factors predicted nutritionists' perceived performance accounting for variance of 61.7%.

Earlier studies found that individual factors that were perceived to influence job performance included staff availability, expectation, individual goals and values and readiness to change (Adeoti & Olabode, 2012; Morgeson *et al.*, 2005). Similar factors which defined motivation were perceived to influence performance of nutritionists. They included staff availability,

expectations, individual goals and values and readiness to change accounting for variance of 22.7%.

Competency which include knowledge, skill, ability, attitude, behavior or other personal characteristic essential to perform the job or contributes to the success of a job are crucial to performance (Morgeson, 2005). Health workers gain competency through pre-service education, in-service training, workshops and seminars as well as through work experience all of which are expected to enhance performance (Kak, 2001). In support of these studies the nutritionists also reported personality, awareness and knowledge and experience as factors which influenced perceived performance accounting for variance of 11.99%. These factors explained the competency of the nutritionists.

Another factor which was perceived to predict performance was intra personal trait. It accounted for variance of 11.3% and it included team player and home-work interplay. Indeed, studies have shown that intra and inter personal characteristic including one's cognitive ability, teamwork, absenteeism, communication among health workers and their patience impact on their performance (Keller *et al.*, 2013; Adeoti and Olabode, 2012; Morgeson *et al*., 2005). Even though team work is said to be important in health care it is not easy for them to work as a team a factor which may affect health care quality (Anneke *et al.*, 2016). With staff shortage at the three teaching and referral hospitals in Kenya it is assumed that teamwork helps nutritionists to provide quality nutrition care a factor that the study confirmed. Of concern is the fact that team work is cited not to be easy to achieve therefore good coordination is required.

Another individual factor which is reported to influence performance is mental ability which relates to the general intelligence or specific requirements such as special problem solving (Saeed *et al.*, 2013; Adeoti and Olabode, 2012; Morgeson *et al.*, 2005). In support of these studies the nutritionists also believed that staff attitude and mental ability predicted perceived performance accounting for variance of 8.5% and 7.1% respectively. It included personality and technology adaptation which defined mental ability

Studies have elicited mixed opinion on effect of age on job performance (Shaffril, 2010; Lourence, 2010). Lourence, (2010) did not find age to have any scientific significance on job performance, citing that an individual's performance does not necessarily suffer just because of advancement in age. There is some correlation between reduced performance and age with respect to certain job tasks as evident in a study among Subway worker in Kore (Shaffril, 2010; Kim & Kim, 2008). The study clearly reveled that as employees grow older their physical and mental ability tends to decline which may affect output. Although the previous study revealed that age influence performance, the nutritionists did not believe that it has any influence on their performance. This is evidence by the fact that age was not extracted as a key factor that influence performance. Reason why research shows no relationship between performance and age may have to do with job experience evident by majority of nutritionists having work experience more than 5 years as illustrated in Table 4.1.

Another study looking at factors influencing job performance among teaching staffs of Kota Kinabalu polytechnic in Malaysia, found that older people felt that their organizations treated

them well by appreciating their effort, giving higher salaries, not being constrained by strict organization rules which motivate them to perform better (Sharma, 2017).

This study revealed that the nutritionists had high level of education and many years of experience, as most them (68.09%) had a degree in nutrition and more than half the respondents had above 10 years of work experience. Even though the nutritionists had high level of education this did not have significance to perceived performance, making education not a good predictor of perceived performance among the nutritionists. The finding is contrary to previous observations that show that work experience and education level is critical in improving performance (Saeed et al., 2013; Aguinis, 2009 & Morgeson, 2005). The recorded performance may be attributed to many years of experience as reported among the nutritionists.

5.4 Social Factors in Relation to Performance

Commented [w3]: Two important social factors emerged as critical predictors of performance. They are not discussed. Please do so while comparing with previous studies.

Performance of nutritionist is perceived to be influenced by several social factors (Lerner & Henkey, 2008). The results of this study reveal that social factors influence the performance of nutritionists accounting for of 48.73%. Indeed, social factors such as marital status and family issue, financial ability and illness may cause mental instability which can influence job performance. This is because social issues are never left at home but are usually dragged to work places, meaning a lot of hours are spent pondering over these issues which eventually interfere with job performance (PENN Behavioral Health, 2008). A study by Judge and Cable (2004) also concurs with this study as revealed that social factors affect workers' performance, therefore physical and mental health is crucial for work performance.

The social factors included community expectations, financial ability, social values, patient's expectations accounted for variance of 40.79 %. In support of this finding Bennett and Franco (1999) reported that community expectation, peer pressure and social values were significant influencers of workers performance. Armenakis, (2007) emphasized the importance of social factors by citing that health care is practiced in a social and cultural context which impacts health.

Illness of family member and financial ability of the patient were perceived to influence the performance of nutritionist accounting for variance of 7.94%. In support Lerner & Henke, (2008) found that when a serious illness or disability strikes a person, the family is affected by the disease process and the entire health care experience. Therefore, there is a correlation between illness and financial ability as reported by Gouvernement de Quebec (2007), who stated that illness may cause additional strain because of economic problem and interruption inn career development which may influence job performance of an individual.

This study also found that community expectation and peer pressure were perceived to have the greatest influence on the performance of nutritionist. It is evident that community's expectation affects performance. In support Beverly *et al.,* (2013) realized that patients' perceptions are important in assessing health care and suggest potential areas which need improvement. To express the importance of community's expectation in improving health care services, CARE international have used community score cards as a tool to express community's expectation to health workers performance (Janmejay& Shah, 2011). To support this statement a study by

Ozcan (2016), while studying effect of expectation on performance revealed that the performance of an employee in an organization greatly depend on the expectations set for them.

Peer pressure occurs when a peer group exerts influence to persuade an individual to change their attitude, values and their behaviors so that they meet group norm (Wood, 2017). While peer pressure may have had a negative connotation when you were in high school, at work place it can motivate one to perform at their highest level. Group competition can spur peer pressure - motivated action from staffs. For example, if a patient's outcome depends on each health workers contribution then they would push each other to achieve the expected outcome. Peer pressure is said to be a strong motivating force than financial reward. Sense of belonging and attachment to a group of colleagues is a better motivation for someone than money (ibid).

Employees influence the productivity of their co-workers, with peer pressure playing a significant role in how well employees perform. A study by Wood (2017), found that presence of high performing co-workers can make an individual improve his performance. This means that when surrounded by high- achieving colleagues, employees are more likely to perform better because they feel pressured to measure up to their co-workers.

Wood (2017), also reported less social pressure in high-skilled occupation compared to low-skilled meaning high-skilled occupation has staffs who are self-motivated unlike low-skilled occupation. Nutrition care being high-skilled it would be important to find out if they are less influence with peer pressure.

Community expectations and peer pressure that emerged as key predictors were further subjected to regression analysis against nutrition care process performance level Batt-score to determine best predictor of performance. The results revealed significant relationship between the indicators with performance based on the t-test for beta-value ($p < 0.05$). This therefore means community expectations and peer pressure were the best predictors of perceived performance. This is contrary to many studies which depicted organizational and structural factors as the best predictors of health workers' performance.

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CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary

Employees' performance is supposed to be one of the most crucial factors affecting the overall organization's performance and success in the competitive market. The aim of this study was to analyze the factors that affect performance of nutritionists at the teaching and referral hospitals in Kenya. The results revealed that the nutritionists' performance was average accounting for variance of 55.77%. The nutritionists' best performance was on nutrition care process (41.86%). Though nutrition care process was the best performed domain of nutrition performance, the other areas are equally important in patients' management and emphasis should be put on them to improve nutritionists' overall performance. The critical factors that emerged as key measures of system and organizational factors included staff motivation (24.4%), performance appraisal (13.15%), career development and capacity building (10.2%), policies (8%) and leadership style (6.9%) all accounting for variance of 62.36%. None of these factors showed significant relationship with perceived performance based on t-test for beta-value ($p>0.05$). Nutrition motivation (22.7%), competency (11.99), intra personal trait (11.39%), staff attitude (8.5%) and mental ability (7.1%) emerged as key indicators of individual factors accounting for variance of 61.7%. Similarly, none of these factors had significance with nutrition care process base on t-test beta-value ($p>0.05$), meaning there is no clear link between individual factor and performance. Social factors were perceived to be the most significant factors which affected performance of nutritionists in this study with community expectation and peer pressure perceived to have the greatest influence on the performance of nutritionists based on the t-test for beta-value ($p< 0.05$).

6.2 Conclusion

1. In conclusion, the study results reveled that nutrition care process was the best performance factor domain within the context of nutrition performance, the other areas are equally important in patients' management and emphasis should be put on them to improve nutritionists' overall performance.

2. The study results show that there was no significant relationship between all the key individual indicators which emerged as predictors of perceived performance. This therefore means that as much as some individual factors emerged key influencers of performance their relationship with actual performance were not significant.

3. The results also show that there is no significant relationship between system and organizational factors and performance of nutritionists at the teaching and referral hospitals in Kenya. This is evident by the results that the indicators that predicted perceived performance did not have effect on actual performance of nutritionists.

4. The study results also show that there is a strong positive relationship between social factors and perceived performance. It is evident from the result that the main social factor that affects performance is community expectation and peer pressure.

6.3 Recommendations

Based on the finding of this study the following recommendations were made: -

1. As way forward nutritionists need to be involved in researches to improve their research work.

2. Nutrition managers and policy makers need to design programs to address the individual factors which emerged as key influencers of perceived performance.
3. Nutrition managers and policy makers need to design programs to address social issues affecting nutritionists to improve their performance.

6.4 Suggestions for Future Studies

1. The study assessed performance of nutritionist at the three teaching and referral hospitals which are all public government hospitals. To rule out the significance of system and organizational factors in influencing performance there is need to do similar study in private and faith based health facilities for comparison.
2. To replicate the results similar studies, need to be carried out at different time.
3. The study assessed perceived performance of nutritionists creating need to assess actual performance of the nutritionists.

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APPENDIX 1: Informed Consent Form

Consent Form for Interviews

Study title: Factors influencing perceived performance of nutritionists at Kenyatta National Hospital, Moi Teaching and Referral and Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital in Kenya.

Use of the results: The results will be used for the purposed of the study in which it is intended for. It is a partial fulfillment of the requirements for the degree of Master of Science in Community Nutrition and Development at Maseno University.

Investigator	Position in the study	Institutional affiliation	Contact information
Oyanga Margaret Monica	Principal investigator	Maseno university	Box 1818, Kisumu Tel:0725535074
Dr. Abong'o B.O. **Dr. Okeyo O.D.**	Supervisor Supervisor	Maseno university Maseno university	Maseno university Private Bag Tel:057-51008

Ethical Review Board Contact Information

Prof. M.L.Chindia, The Secretary-Kenyatta National Hospital ERC, Box 20723.Nairobi.

Tel :(Day time only):020-726300-9.

Prof. Were, The secretary-Moi University College of Health Sciences/Moi Teaching and referral Hospital and institutional research and ethics committee (IREC) review

Dr. Bonuke Anyona, Secretary-Maseno University Ethics Review Committee, Box Private Bag – Maseno, Kenya.

Tel :(Day time only): +245 721 543 976; +254 733 230 878.

Email: sbonuke@gmail.com

Jaramogi Oginga Odinga Teaching and Referral Hospital Ethics Review Committee can be contacted on telephone numbers: -

057-2020321, 057-2020801, 2020803, 2020321

Fax: 057-2024337

Emergency Tel. (Anytime Day/Night): Oyanga M. Monica cell phone: +2540725535074; +2540713675147; +2540787836645

Email: monicaoyanga@yahoo.com

Researcher's Statement

I Oyanga Monica, Msc. Community Nutrition and Development student from Maseno University is requesting you to take part in my research study. The purpose of this form is to give you information you will need to help you decide whether to take part in this study or not. Please listen very carefully as I read this form. You may ask questions about what I will ask you to do, the risks, the benefits, your rights as a respondent or anything about the research which may not be clear. Once all your questions are answered you can decide if you want to take part in the study or not. This process is called "informed consent. "If you accept to take part in this study after I have described it to you and all you question have been answered to your satisfaction I will give you a signed copy of this form for your record and later reference.

Purpose of the Study:

The purpose of this study is to determine factors that influence nutritionists' performance at Kenyatta National Hospital, Jaramogi Oginga Teaching and Referral Hospital and Moi Teaching and Referral Hospital, Kenya.

Procedures of the Study:

The study will be carried out at Kenyatta National Hospital, Moi Teaching and Referral Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital in Kenya. During the interview trained enumerators will ask you questions using a questionnaire which will take approximately forty-five (45) minutes. They will include details about social affiliation, demographics, individual, social, system and organizational factor that affect performance of the respondents in the selected hospitals.

Risks Stress or Discomfort:

There are minimal risks for participating in this study which could include psychological and emotional stress or discomfort. There may be other risks, stress or discomfort of taking part in this study which, we may not know of as of now.

Benefits of Participating in the Study:

There are no direct benefits to the participants. However, it is hoped that your participation will help the researcher learn more about factors influencing perceived performance of nutritionists at Kenyatta National Hospital, Moi Teaching and Referral Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital. There will be no compensation for your participation.

Volunteerism and other Information:

Participation in this study is voluntary and you have the right to withdraw at any time or refuse to participate. Your refusal to participate will not subject you to any victimization. All information you give will remain confidential, being reported as group data with no identifying information. All data including data collecting tools will be kept in a secure location and only those involved in the research will have access to them. We will make the necessary effort to keep the information that you give confidential; however, remember that no system of protecting your confidentiality is perfect or completely secure. Remember that the Ethics Review Committees of the study site may need to review the study records about you.

By signing this form, I am allowing the researcher to collect data from me. I also understand that this consent form recording is effective until the 27th August/2017. In case of any queries please feel free to contact Oyanga M. Monica through the address and telephone number on the first page of this consent form.

Participant's Signature: …….. Date: …….

Name of researcher: ……... Signature: …… Date: ……

Participant's Statement

The purpose of this study has been explained to me. I accept to participate in the said study.

I have had a chance to ask questions. If I have a question later I can ask any of the researchers listed in the first page of the consent form. If I have any questions about my right, I am allowed to call Maseno University Ethics Review Committee Secretary on telephone number +254 721 543 976; +254733 230 878. I have received a copy of the above consent.

Name of participant……. Signature…….

Date……. (To be filled by enumerator)

Name of witness (If necessary) ……

Signature……... Date…….

APPENDIX 2 : Questionnaire

FACTORS INFLUENSING PERFORMANCE OF NUTRITIONIST IN THE TEACHING AND REFERAL HOSPITALS IN KENYA

Date..... Questionnaire No……

County…….. Sub-County ……

Health facility……

SECTION ONE

Personal Information

1. O Demographic Characteristics:

Respondent's code: …… Age: …….

Sex/gender: 1. Male 2. Female

Marital status: ……..

Years of work:

1. < 1 year 2. 1-5 years 3. Above 10 years

Qualification:

1. Certificate 2. Diploma 3. Bachelors' degree

Occupation:

1. Permanent 2. Contract 3. Volunteers 4. Other (Specify)

SECTION TWO

2.1 Performance on Key Areas of Competencies

Instructions: Please rate yourself on how you have performed in the following key areas of competence as a nutritionist.

1. Excellent 2. Very good 3. Good 4. Very poor 5. Poor

Statement	1	2	3	4	5
Nutrition assessment and screening					
Nutrition diagnosis					
Case presentation					
Diet prescription					
Nutritional counseling					
Research work					
Training and seminar/presentations					
Provision of alternative feeding methods					
Team work/cooperation					

2.1 Systems and Organizational Factors

Instructions: Please rate the following as per the extent to which they influenced your performance in competence areas as a nutritionist in the past one week

1. Strongly disagree 2. Disagree 3. Undecided 4. Agree 5. Strongly agree

Statement	1	2	3	4	5
Technology /equipment					
Job condition clarity/complexity					
Monitoring system					
Incentives/rewards/salary					
Performance evaluation/feedback					
Resources available (material, tools)					
Availability /attribute of standards					
Training/career development					
Supportive supervision					
Work load					
Organizational goal and values					
Policies (Promotion, leave, transfers)					
Communication mechanism (Manuals, memos)					
Physical work environment (infrastructure)					
Organization culture and climate					
Career development					
Department currently allocated (Surgical, medical, Obstetric and gynecological, pediatric, MCH, special clinic, maternity, ICU, burns unit or renal unit)					

Individual Factors

Instructions: Please rate the following as per the extent to which they influenced your performance in competence areas as a nutritionist in the past one week.

1. Strongly disagree 2. Disagree 3. Undecided 4. Agree 5. Strongly agree

Statement	1	2	3	4	5
Provider Competencies					
Personality					
Age					
Ability					
Skill					
Awareness					
Gender					
Knowledge and experience					
Staff's attitude					
Staff availability					
Technology adaptation					
Illness/good health					
Team player(cooperation)					
Home -work interplay					
Provider Motivation					
Expectations					
Self-efficacy					
Individual goals/values					
Readiness to change					
Job satisfaction					

2.3 Social Factors

Instructions: Please rate the following as per the extent to which they influenced your performance in competence areas as a nutritionist in the past one week

1. Strongly disagree 2. Disagree 3. Undecided 4. Agree 5. Strongly agree

Statement	1	2	3	4	5
Community expectation					
Illness (family member's illness)					
Financial ability					
Social values (how community value nutrition care)					
Patient's expectation					
Peer pressure					

Comments……..……

……

Thank you for your feedback. I sincerely appreciate your honest opinion and will take your input into consideration while providing nutrition services in future.

Appendix 3: Ethical Clearance for Maseno University Ethics Review Committee

MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050
Fax: +254 057 351 221
Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

FROM: Secretary - MUERC

DATE: 21st November, 2014

TO: Monica M. Oyanga
PG/MSC/073/2010
Department of Nutrition and Health
School of Public Health and Community Development
Maseno University, P. O. Box 333, Maseno, Kenya

REF: MSU/DRPC/MUERC/00112/14

RE: Factors Influencing Performance of Nutritionists at Teaching and Referral Hospitals in Kenya. Proposal Reference Number: MSU/DRPC/MUERC/ 00112/14

This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 21st day of November, 2014 for a period of one (1) year.

Please note that authorization to conduct this study will automatically expire on 20th November, 2015. If you plan to continue with the study beyond this date, please submit an application for continuation approval to MUERC Secretariat by 18th October, 2015.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach MUERC Secretariat by 18th October, 2015.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advice MUERC when the study is completed or discontinued.

Thank you,

Yours faithfully,

DIRECTORATE OF RESEARCH PUBLICATION & CONSULTANCIES 21 NOV 2014 MASENO UNIVERSITY

Dr. Bonuke Anyona,
Secretary,
Maseno University Ethics Review Committee.

Cc: Chairman,
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED

Appendix 4: Ethical Clearance Jaramogi Oginga Odinga Teaching and Referral Hospital

MINISTRY OF HEALTH

Telegrams: "MEDICAL", Kisumu
Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: ercjootrh@gmail.com
When replying please quote

JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

ERC.1B/VOL.I/156

Ref: .....

Date 26th February, 2015

Oyanga M. Monica,
PG/MSC/073/2010,
MASENO UNIVERSITY.

Dear Monica,

RE: FORMAL APPROVAL TO CONDUCT RESEARCH TITLED: *"FACTORS INFLUENCING PERFORMANCE OF NUTRITIONISTS AT TEACHING AND REFERRAL HOSPITALS IN KENYA"*

The JOOTRH ERC (ACCREDITATION NO. 01713) has reviewed your protocol and found it ethically satisfactory. You are therefore, permitted to commence your study immediately. Note that this approval is granted for a period of one year (26th February, 2015 to 27th February, 2016). If it is necessary to proceed with this research beyond the approved period, you will be required to apply for further extension to the committee..

Also note that you will be required to notify the committee of any protocol amendment(s), serious or unexpected outcomes related to the conduct of the study or termination for any reason.

Finally, note that you will also be required to share the findings of the study in both hard and soft copies upon completion.

The JOOTRH ERC takes this opportunity to thank you for choosing the institution and wishes you the best in your endeavours.

Yours sincerely,

FRED OUMA AKWATTA,
SECRETARY - ERC,
JOOTRH – KISUMU.

JOOTRH ETHICS & REVIEW COMMITTEE
P. O. Box 849 - 40100
KISUMU

Appendix 5 Ethical Clearance for University of Nairobi & Kenyatta National Hospital

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH/UON-ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/372

31st August 2015

Oyanga M. Monica
PG/MSC/073/2010
Schoolof Public Health and Community Development
Department of Nutrition and Health
Maseno University

Dear Monica

RESEARCH PROPOSAL –FACTORS INFLUENCING PERFORMANCE OF NUTRITIONIST AT TEACHING AND REFERRAL HOSPITALS IN KENYA (P56/02/2015)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 31st August 2015 – 30th August 2016.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
g) Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website **http://www.erc.uonbi.ac.ke**

Protect to discover

Appendix 6: Ethical Clearance for Moi University Institute Research and Ethics Committee

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET
Tel: 33471/2/3

Reference: IREC/2015/09
Approval Number: 0001343

27th January, 2015

Monica M. Oyanga,
PG/MSC/07/2010,
Department of Nutrition and Health,
School of Public Health and Community Development,
P.O. Box 333,
MASENO-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
27 JAN 2015
APPROVED
P. O. Box 4606-30100 ELDORET

Dear Ms. Oyanga,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has received your request for approval of your study titled:

"Factors Influencing Performance of Nutritionists at Teaching and Referral Hospitals in Kenya".

On the basis of your study review and approval by the Maseno University Ethics Review Committee (MUERC), IREC is glad to inform you that your study has been granted a Formal Approval Number: **FAN: IREC 0001343** on 27th January, 2015. You are therefore permitted to continue with your study.

Note that this approval is for 1 year; it will thus expire on 26th January, 2016. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc: Principal- CHS Dean - SOM Dean - SOD
Director - MTRH Dean - SPH Dean - SON