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Research Article

Support Supervision and Personnel Perceived Health Services Delivery at Health Centers in Busoga Region

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Abstract: This study examined the effect of Support Supervision on Personnel Perceived Health Services Delivery in selected Health Centers in Busoga region, Eastern Uganda. The study was conducted basing on the following objectives; To establish the nature of support supervision in Health Centers in Busoga region. To analyse the levels of Personnel Perceived Health Services Delivery in Busoga region. To examine the relationship between support supervision and Personnel Perceived Health Services Delivery in Health Centers in Busoga Region.The study was based on the following methodological approaches; the research paradigm was post-positivistic; the research design was cross sectional survey design; total population Busoga Health Forum (2020) emphasized that among the health workers, 82 employees work at District Health Offices and 2967 employees work at health centers; target population was 1073; sample size of 651; data collection method questionnaire and interview guide and data was analysed using measurement of central tendency; Pearson's correlation moment, path analysis and content analysis. The study findings indicated that, there exists positive correlation/relationship between the level of support supervision and Personnel Perceived Health Services Delivery in Lower district health facilities of Busoga Region ($r = 0.2106$). This relationship is however statistically significant ($p = .001 < 0.05$). **Conclusion of the study:** The study concluded that the support supervision affects the levels of Personnel Perceived Health Services Delivery. Recommendations of the study: The study recommended that the Ministry of Public Service should encourage ministry of health to carry out timely and routine support supervision of the health workers.

Keywords: Health Services, Delivery, analysis, Busoga Region.

INTRODUCTION

The findings of the study investigating the relationship between work environment and Personnel Perceived Health Services Delivery in Health Centers in Busoga region are provided. The chapter specifically provides results regarding the relationship between support supervision and Personnel Perceived Health Services Delivery at Health Centers in Busoga region. It also discusses the results specifically comparing them with the previous related literature with respect to this objective.

Theoretical Perspective

For better comprehesion, it was theoretized that the major theory which informed this study was the Person Environment Fit Theory. Rauthmann (2020) postulated that the person–environment (PE) theory is grounded in Kurt Lewin's maxim (1935) that B=(PE); behavior is a function of both person and environment. It comprises four models having the person and environment as the most distinct, according to Edwards et al. (1980).

In the context of Busoga region, the maternal deaths per year at regional referral hospitals are very high, with an average of 37 maternal deaths per hospital (Busoga Health Forum, 020). In Jinja Regional Referral Hospital, the trends for the last three years has been an average of 30 maternal deaths per year and an infant death rate of about 14% in a month (Busoga Health Forum, (2020).

Statement of the problem

Work environment is fundamental in the offering of health services. Uganda's ministry of health urges various health centres to have physical infrastructural development, supply of drugs, tools and equipment.

However, the poor work environment leads to poor personnel perceived health service delivery in Busoga region. This is evidenced by the UBOS data for 2019/20 which indicates a reduction in health promotion strategies such that the average latrine coverage in Busoga region is at an average of 54.1% with no significant change from 51% in 2017 as opposed to 95% national target of coverage, the Out-patient Department (OPD) attendance is unnoticed in 2019/20 assessment, and this is much worse than it was at 40.2% in 2017, maternal morbidity and infant mortality in Busoga region is at an average of 33.3% every year (UBOS, 2020).

Study objectives

To establish the nature of support supervision in Health Centers in Busoga region

To analyse the levels of Personnel Perceived Health Services Delivery in Busoga region

To examine the relationship between support supervision and Personnel Perceived Health Services Delivery in Health Centers in Busoga Region

Hypothesis of the study

There is no relationship between support supervision and Personnel Perceived Health Services Delivery in Health Centers in Busoga Region

Scope of the study

Geographical Scope

The study was conducted in Busoga Region-Coordinates are latitude 0.55; longitude 30.75; precision 0.017 (UBOS, 2021). The region consists of 11 Districts, Bugiri, Buyende, Iganga, Jinja, Kaliro, Kamuli, Luuka, Mayuge, Namayingo, Namutumba and Bugweri District which was created recently in 2018 (UBOS, 2021). Busoga region has 23 Counties, 102 sub counties, 559 Parishes and 4,012 Villages (UBOS, 2021).

Content Scope

The study seeks to ascertain the relationship between Work Environment and Personnel Perceived Health Services Delivery at Health Centers in Busoga region.

Time Scope

The study considered a period from 2010 to 2021. This is the time Busoga region has been facing multiple questions about the Personnel Perceived Health Services Delivery system.

Significance of the study

The study generated results that will serve as checks and balances into the local system of health, that may in turn guide development of a framework to harmonize the relationship between support supervision and Personnel Perceived Health Services Delivery in communities.

The researcher was to benefit from this study by getting insight on how certain factors work in the various Local Governments in Busoga Region. It will provide space to make comparisons in Personnel Perceived Health Services Delivery among local governments in Busoga region.

In the same way, results of this study will penetrate into accountability frameworks of district leaders and technocrats, for purposes of evaluation and design of a model for Personnel Perceived Health Services Delivery.

The study was a basis for other people to conduct related studies in other regions of Uganda putting into consideration that almost ¾ of Uganda's regions have issues with Personnel Perceived Health Services Delivery.

To policy makers, findings from this study may guide development of policies and guidelines to promote construction of infrastructure at health facilities.

Conceptual Framework
The figure 1.1 below is a summary of the connections between variables.
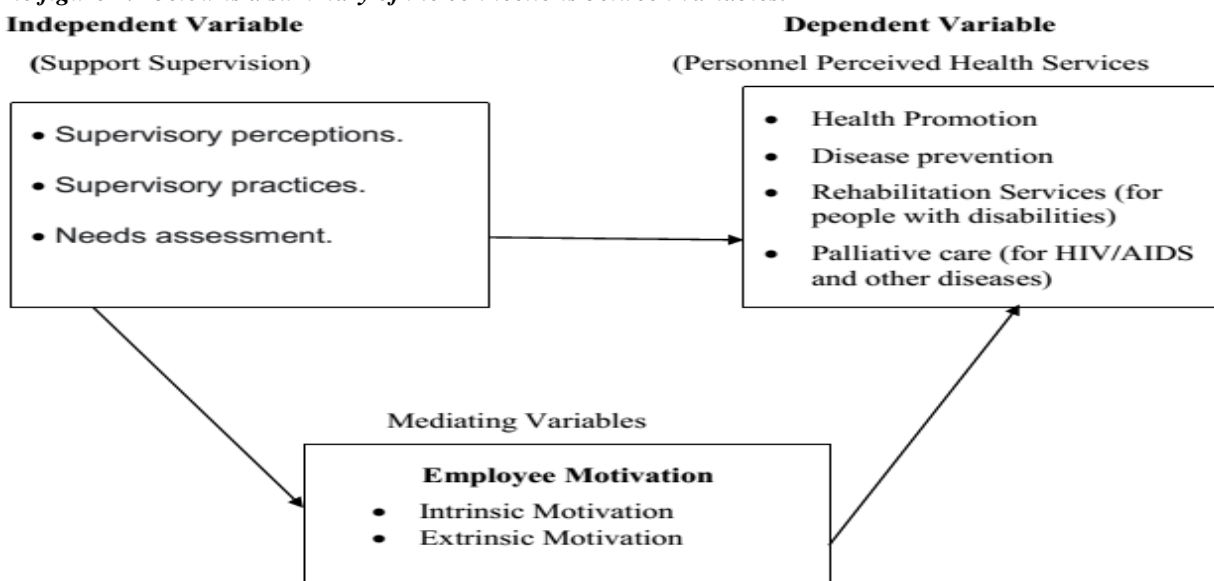
Source: Modified from the works of Adhanom, Kim, & Angel, (2018); Acheng, (2014); Adi., (2012)
Figure 1: *Support supervision and Personnel Perceived Health Services Delivery*

The illustration in Figure 1.1 above illustrates a conceptual analysis of the study variables. According to the illustration, the independent variable (Support supervision) is categorized as Supervisory perceptions, Supervisory practices and Needs assessment. The underlying assumption to be tested is that each of the aspects of Support supervision has something to do with Perceived Personnel Health Services Delivery which is the dependent variable. At the same time, work motivation is viewed as a mediating variable. The assumption is that whereas Support supervision may demonstrate a positive relationship with Perceived Personnel Health Services Delivery, work motivation may be an eventual hindrance.

METHODOLOGY OF THE STUDY
Research Philosophy and paradigms
A combination of ontological objectivity, epistemological subjectivity and axiological objectivity led to post- positivism. This combination was the foundation of quantitative and qualitative approaches that were employed in this current study.

Research design
This study used a cross sectional survey and case study design adopting quantitative and qualitative approaches.

Study population
The study population constituted 3049 health workers from of 311 health centers and eleven district s (11) (Busoga Health Forum, 2020). Busoga Health Forum (2020) emphasized that among the health workers, 82 employees work at District Health Offices and 2967 employees work at health centers.

The target population of study was from the districts of Namutumba, Iganga, Jinja, Buyende, Namayingo and Kaliro. From the DHOs office in the 6 selected districts, the target population was 24 individuals, while at health centers, the target population was 1073 as explained below.

Sample Size
The sample size of the study was determined using Krejce and Morgan (1970) formula.
The Krejcie and Morgan Sample Size Calculation was based on P=0.05 where probability of committing type 1 error is less than 5% or P<0.05. Formulae below applies since the population is finite:

$$S = \frac{x^2 NP(1-P)}{d^2(N-1)+x^2 P(1-P)}$$

$$S = \frac{(3.841) *1073*0.5*0.5}{(0.05)^2*1073-1+(3.841) *0.5*0.5}$$

S = 283 health workers

The sample size was also adjusted with a design effect of 2 (283*2=566) due to clustering of districts thus bringing our overall sample size to 651 health workers of which there was excess of 85 respondents due to the response rate in the field.

Sampling Techniques
In this study, the researcher adopted three sampling strategies-stratified, simple random and purposive sampling.

Table.1 Categorization of respondents

No	Category	Population	Sample	Sampling techniques
1.	Doctors	20	12	Purposive
2.	Clinical officers	220	133	SRS and Convenient
3.	Nurses and midwifery	650	394	Simple random sampling
4.	DHOs,	24	15	Purposive
5.	Laboratory technicians	146	89	Simple Random Sampling
6.	Pharmacists	13	8	Convenient
7.	Total	1073	651	

Source: Primary Data (2021)

Data Collection Methods

This study was conducted using a survey, interview, and document analysis as explained under the subsequent subheadings.

Data Collection Instruments

In this study, three instruments to wit, self-administered questionnaires, interview guide and Observation guide were used.

4.8 Validity and Reliability

This consists of validity and reliability of the research instruments.

4.8.1 Validity of the instruments

Validity refers to how a test measures what it is purported to measure, (Katebire, 2008). Validity is the ability of the research instrument to measure what it is intended to measure. For quantitative data, the researcher endeavored to attain validity of coefficients of at least 0.70 or 70%. Pattusamy, et al., 2013), argues that items with validity coefficients to at least 0.70 are accepted as valid and reliable in research. Validity was determined by using Content Validity Index (C.V.I).

CVI = Number of items considered valid on the draft Number of items on the draft instruments

As a rule of research methodology, the researcher aimed at a CVI of at least 0.7, in accordance with (Mokkink et at., 2010b). After calculating the C.V.I, all the results were above 0.7. This meant that the instrument was valid.

Predictive validity was used, itemized and the formula for Content Validity Index (CVI) below was used to calculate accepted items:

$$CVI = \frac{Number\ of\ items\ originally\ set\ by\ the\ researcher}{Number\ of\ items\ vetted\ and\ accepted\ by\ experts} \times 100$$

Table.2 Validity Results

Variable	Number of Items	CVI
Support Supervision	12	0.750
Motivation	19	0.944
Service delivery	13	0.769
Total	**44**	**0.821**

Source: Primary Data (2021)

Reliability of the instruments

Reliability refers to the degree of consistency of a measure to the effect that a test can give the same repeated result under the same conditions (Martyn & Wilson, 2019). Katebire (2017) states that reliability is the degree to which an assessment tool produces stable and consistent results. The researcher used Cronbach Alpha (α) coefficients to determine the reliability of the instrument. According to Cronbach, for an instrument to be reliable, its Cronbach Alpha must be at least from .70 and above. Cronbach Alpha's scale of measuring reliability indicates that any scores less than .60 is an unacceptably low reliability, 0.60-0.69 defines marginally reliable results, 0.70-0.79 describes reliable results, 0.80-0.90 scale describes highly reliable results and >0.90 is a scale for very highly reliable. Reliability results in Table 3.5 therefore show that all variables meet the Cronbach average score of more than 0.70. On this note, all results of the study are acceptable and subject to analysis.

Table.3 Reliability Results

Variable	Number of Items	Cronbach's Alpha
Support Supervision	12	.730
Motivation	19	.712
Service delivery	13	.914
Total	**44**	**0.785**

Source: Primary Data (2021)

Data Analysis
Quantitative data analysis

Descriptive statistics were analyzed through measurement of central tendency whereby Demographic characteristics was presented in summary tables and analyzed using frequency and percentage ratings were used to derive the mean and standard deviation. Individual items for supervision, Physical Work Environment, and Information Management was rated using mean and standard deviation. Inferential statistics were analyzed to get the relationship between supervision, Physical Work Environment, Information Management and Health Services Delivery was established using Pearson Correlation model. The study used Structural equation modelling in order to get the mediation effect the study. The model revealed significant relationship at 95% confidence interval leaving a p-value of 0.05. Path analysis was used to get structural equation modeling of the study.

Qualitative data analysis;

The data from key informant interviews was analyzed using content analysis. The narrations and statement from key informants were analyzed to get the perception of the informant about the Work Environment and Personnel Perceived Health Services Delivery.

Limitations of the study

Data collection challenges during covid 19 lockdown.

Because of lockdown, it was hard to collect data as many people were suffering from covid 19. It was hard to access respondents and informants. However, the researcher sought clearance from the Resident District Commissioner Namutumba allowing him to traverse Busoga region for data collection.

Misinterpretation for the structured research instruments. The researcher and the research assistants had to resort to interpreting the research instruments to the informants and respondents.

During data collection, some respondents and informants were hesitant to participate in the data collection process. However, the researcher sought for their hospitability as he explained to them the rationale of the research and in return they accepted to participate in the study.

Ethical Considerations

An official permission letter was obtained from the Office School of Postgraduate Studies and Research to indicate that this study is purely academic and limit possible bias from respondents. Participants/respondents' right to privacy was observed by withholding individual identities to guard against traceability.

In terms of confidentiality, every effort was made by the researcher to preserve utmost confidentiality through: assigning code names/numbers for participants on all research notes and documents, keeping notes, and any other identifying participant information under key and lock. In addition, participant data was kept confidential all through since there may be no instances that may oblige the researcher to report on incidents of abuse or suicidal risks.

To cater for anonymity, all respondents and participants were given equal treatments to enable each of them participate willingly without bias, and unrealistic expectations. The researcher had an agreement with respondents on the specific dates, time and convenient place to obtain data.

Findings of the study
Conceptualization of support supervision

When the informants were asked the meaning of support supervision, the following responses were availed;

We consider support and supervision independently. This basically means that there is somebody who is doing work somewhere and you have to go and see what they are doing but as they are doing it, you are supporting them to do it better or in the better way. It is assumed that the one going to supervise has better knowledge, skills, experience over the one doing the task and then the supervisor goes to add value to the supervisee. (Key Informant – II, 2021).

Perception of Personnel Perceived Health Services Delivery

When the informants were asked about their understanding of Personnel Perceived Health Services Delivery, the following responses were given;

We look at the interventions provided in the community per se the services that are entitled to be given to our clients. These can be curative, health promotion, direct intervention, counselling among others. Curative I mean providing the services like to the patients in maternity, OPD, especially when conducting deliveries. Health promotion we look at immunization of preventable diseases especially to children under the age of one, health education we look at diseases like malaria, diarrhea. (Key Informant – II, 2021).

Descriptive Results

The objective being addressed in this chapter that investigating the relationship between support supervision and Personnel Perceived Health Services Delivery in Health Centers in Busoga region are provided. The independent variable of interest is support supervision and the descriptive results in this regard are presented in **Table.4.**

Table.4: Descriptive Findings on Support supervision in Health Centers in Busoga region

Support supervision Aspects	Mean	Std. Deviation
The Level of supervision here is good	**2.65**	**1.18**
My performance matches with the supervision I receive	2.63	1.32
I feel comfortable, safe and healthy here	2.66	1.23
My co-workers have good relationship with me and they are friendly	3.13	1.45
My supervisors have good relationship with me and they are friendly	2.85	1.17
There is effective communication in our organization	3.02	1.45
Over here employees are supported in decision making	2.62	1.17
My work is such that I am able to seek my supervisors help at any time	2.81	1.40
We have very supportive supervisors with appropriate command	**3.41**	**1.15**
The supervision I receive permits me to perform my duties with autonomy	**3.63**	**1.21**
We have very good supportive team culture in the organization	3.24	1.14
We are free to apply new skills and ideas that we have with minimum supervision	3.33	1.29
Pooled Mean & Standard Deviation	**3.00**	**1.26**

Scale: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low
Source: Primary Data (2021)

The study findings fair levels of support supervision (M = 2.65) with the moderate performance levels matching the supervision received (M = 2.63). The results also show that the health workers fairly feel comfortable, safe and healthy working in the lower district health facilities (M = 2.66) and that their co-workers demonstrate a fairly friendly relationship with them (M = 3.13). The health workers equally reported an average level of relationship that was fairly friendly with their respective supervisors (M = 2.85).

The findings in **Table.4** indicated that there was a fairly effective communication in to the health workers in Health Centers in Busoga Region (M=3.02) and here employees were sometimes involved in decision making with appropriate support (M =2.62). Results from table.5.3 revealed that health workers in Busoga Region fairly balanced work and family (M =2.81) and had fairly flexible chains of command from the supervisors (M =3.41). The study findings from table.5.3 also show that the health workers in Health Centers in Busoga Region fairly had autonomy to perform their duties (3.63), fair team culture in the organization (M =3.24) and sometimes freely applied new skills as well as ideas with minimum supervision (M= 3.33)

The study on the overall reveals an average/moderate level of support supervision to the health workers in Health Centers in Busoga Region (M = 3.00, SD = 1.26).

Role of support supervision in enhancing health services delivery in Busoga region
When the informants were asked the role of support supervision in enhancing Personnel Perceived Health Services Delivery, the following responses were availed;

> *The overall objective of support supervision is to make services better by coming up with activities and agreeing on the deliverables, set targets and the time frame, the person responsible and how they are to be done, provide logistics to do the activities. Then set the mode of supervision on how to approach the health workers. With integrated support supervision, we look at minimum resources and maximum out put but all is geared to improve health services delivery. Health service delivery without support supervision makes you not sure that what is given to the consumer is the right thing thus the need to do supervision regularly so as to improve or maintain a certain standard of services. To ascertain if the organizational goals are obtained. (Key Informant – II, 2021).*

Support supervision within Busoga region
State of work environment in Busoga region

When the informants were asked about the state of work environment in this district, the following responses were given; *A big percentage of the health facilities have very old structures and these structures need to be improved. There are less accommodation facilities at the health center IIIs all which leads to continued delays in time management.* (Key Informant – II, 2021).

Personnel Perceived Health Services Delivery
In this study, Personnel Perceived Health Services Delivery was depicted as the dependent variable. This was measured from timeliness, service quality and value for money. The descriptive results capturing all the different aspects of Personnel Perceived Health Services Delivery are provided in **Table.5**;

Table.5: Descriptive Results on Personnel Perceived Health Services Delivery in Health Centers in Busoga Region

Personnel Perceived Health Services Delivery	Mean	Std. Deviation
Timeliness		
Patients are always worked on with high responsiveness	2.98	1.41
There is proper management of appointment scheduling for patients	3.02	1.35
Patients have filed a lot complaints for long waiting hours	2.93	1.37
Timeliness and accessibility to healthcare services are essentially important when it comes to diagnostic procedures	2.73	1.39
We deliver health service to our clients on time	2.89	1.43
Mean & Standard Deviation	**2.91**	**1.39**
Service quality		
Health Centre has got health specialists in every department delivering quality services to patients	2.84	1.41
Hospital handles patients/ clients politely	2.81	1.36
Patients are reliably attended to and on time	2.81	1.26
There is assurance in the services provided by the health center	2.65	1.23
health services are easily accessible and staff exhibits credibility during service provision	2.78	1.32
Mean & Standard Deviation	2.78	1.32
Value for money		
There is effective accountability and efficiency in the hospital operations and projects	3.02	1.33
VHT forms part of performance management systems at the Health Centre	2.74	1.31
There is high rate of client satisfaction at the health center	2.83	1.32
Mean & Standard Deviation	**2.86**	**1.32**
Pooled Mean & Standard Deviation	**2.85**	**1.35**

Legend: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low
Source: Primary Data (2021)

Timeliness

The finding in **Table.5** indicated that Patients in Health Centers in Busoga Region were sometimes worked on with high responsiveness *(M* =2.98**).** The results from table.5.4 as well showed that there was sometimes appropriate management of the scheduled appointments for the patients (*M* =3.02). The findings from table.5.4 show that there is average timeliness and accessibility to healthcare services when it came to diagnostic procedures (M =2.73) in addition to average levels of delivery of health services to their clients on time (M =2.89). The study results from table.5.4 however show that patients in Health Centers in Busoga Region sometimes file complaints for long waiting hours (*M* =2.93). This result illustrates the need to improve the time management in patient handling.

Service quality

The results in **Table.5** indicated that Health Centers in Busoga Region had fair health specialists in every department that delivered quality services to patients (*M*=2.84), fairly handled patients/ clients politely (*M*=2.81) and sometimes Patients were reliably attended to on time (*M*=2.81).

The findings in **Table.5** showed that the health workers in Health Centers in Busoga Region were fairly assured in the services provided (*M*=2.65), services were fairly accessible and staff sometimes exhibited credibility during service provision(*M*=2.78).

Value for money

The finding in **Table.5** indicate fairly effective accountability and efficiency in the hospital operations and projects (*M*=3.02), sometimes VFM formed part of performance management systems at the Hospital (*M*=2.74) and often there was high rate of client satisfaction at the Health Centers in Busoga Region (*M*=2.83).

Correlational Results

This study as its first objective was set to determine the relationship between support supervision and Personnel Perceived Health Services Delivery at Health Centers in Busoga region. In order to address this objective, Pearson Correlation Analysis was undertaken and the results are in

Personnel Perceived Health Services Delivery
Support supervision in Health Centers in Busoga region

Table.6 Pearson Correlation results between support supervision and Personnel Perceived Health Services Delivery in Health Centers in Busoga Region

Correlations

		Supervision	Personnel Perceived Health Services Delivery
Supervision	Pearson Correlation	1	0.2106 **
	Sig. (2-tailed)		.000
	N	528	528
Personnel Perceived Health Services Delivery	Pearson Correlation	0.2106 **	1
	Sig. (2-tailed)	.000	
	N	528	528

***. Correlation is significant at the 0.01 level (2-tailed).*

Source: Primary Data (2021)

According to **Table.6,** there exists positive correlation/relationship between the level of support supervision and Personnel Perceived Health Services Delivery in Lower district health facilities of Busoga Region (r = 0.2106). This relationship is however statistically significant (p = .001 < 0.05). This result from table.6 shows that the more the level of support supervision the higher the level of Personnel Perceived Health Services Delivery and that the less/lower the level of support supervision the lower the level of health services delivery in Health Centers in Busoga Region. This result is however different from what was found by Natasha (2019) in the USA that effectiveness of supportive supervision is mixed and sometimes its role especially in low-income countries like Uganda in the case of this study is inconclusive.

When the key informants were asked what their understanding of Health service delivery was, the following responses were availed;
A fundamental informant pointed out that;

> *This is when services related to health are offered to the community to both the sick and the healthy. They are both curative and preventive. Preventive include immunization, vaccination, family planning and more. Curative is when one is sick and needs relief or needs to be freed from the sickness. Healthy services also include counselling* (Key Informant – I, 2021).

Conclusion of the study
The study concluded that the support supervision affects the levels of Personnel Perceived Health Services Delivery. This implies that the lesser/lower the level of support supervision, the lower the level of Personnel Perceived Health Services Delivery in Health Centers in Busoga Region.

Recommendation of the study
The study recommended that the Ministry of Public Service should encourage ministry of health to carry out timely and routine support supervision of the health workers.

REFERENCES
1. Acheng, J. R. (2014). The Health Management Information System Volume 1 – Health Unit and Community Procedure Manual. Kampala: MoH.
2. Acheng, J. R. (2020). Strategy for Improving Health Services Delivery 2016-2021. Kampala: MoH.
3. Adhanom, T. G., Kim, J. Y., & Angel, G. (2018). Delivering quality health services: a global imperative for universal health coverage. New York: World Health Organization.
4. Adi, B. (2019). Simple Random Sampling: Definition and Examples. Ankara: https://www.questionpro.com.
5. Busoga health forum (2022) https://www.busogahealthforum.org/wp-content/uploads/2022/02/BUSOGA-HEALTH-FORUM-PROFILE.pdf.retrieved on 09/10/2022
6. Edwards, J. R., & Rothbard, N. P. (1999). Work and family stress and well – being: An examination of person – environment fit in the work and family domains. Organizational Behavior and Human Decision Processes, 77(2), 85–129
7. Busoga Health Forum (2020). https://www.busogahealthforum.org/wp-content/uploads/2022/02/BUSOGA-HEALTH-FORUM-PROFILE.pdf
8. Katebire, D.A. (2007). *Social Research Methodology: An Introduction.* Kampala: Makerere University Printers.
9. Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement.
10. Martyn, S., & Wilson, L. T. (2019). Definition of Reliability. Washington DC.
11. MOH. (2014). Annual Health Sector Performance Report. Quality Assurance Division. Kampala: Ministry of Health.
12. Mokkink, L. B., Terwee, C., Patrick, D., Alonso, J., Stratford, P., Knol, D. L., Bouter, L., & DeVet, H. C. W. (2010b). The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status instruments: An international Delphi study. Quality of Life Research, 19, 539-549.

13. Natasha, P. (2019). Evidence review of what works for health. ReBuild Consortium, 5.

14. Pattusamy V., N. Nandini, M.Vijay Kumar and K.Bheemappa (2013). Water Quality Studies of Bellandur Lake, Urban Bangalore, Karnataka, India. International Journal of Advanced Research (2013), Vol.1, Issue 4, 77-82.

15. Rauthmann, J. F. (2020). *Person-environment relations (figures)*. Retrieved from osf.io/ds6mw (CC-BY 4.0 license).

16. UBOS (2021), Uganda National H/se survey 2019/2020, kampala Uganda. Mayuge District Local Government District Development plan II (2020)

17. UBOS (2020), Uganda Bureau of Statistic. 2020 Statistical Abstract, kampala Uganda.