Evaluating the Framework, Range, and Procedures of Health System Research within the Ghana Health Service (GHS)

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Abstract: The research conducted an evaluation of the organizational structure, extent, and procedures within the Ghana Health Service (GHS) with a focus on health system research (HSR). The study utilized a non-interventional approach, employing both qualitative and quantitative methodologies. Specifically, it adopted a descriptive cross-sectional survey design. The research population encompassed GHS management and staff members from three research centers, totaling 300 participants. This cohort included key figures such as the Director-General of Ghana Health Service, the Director of Research and Information Management System (RSIM) at the Ministry of Health (MoH), the Director of Research at GHS, as well as three heads of these institutions and 294 staff members. Data analysis was carried out using SPSS software, and the findings revealed that all organizations had established organograms. The presence of an organogram indicated a solid foundation for research efforts. However, the study uncovered that research was not receiving the requisite support and attention within this organizational structure. Some respondents expressed dissatisfaction with the placement and resource allocation for research within the organogram, advocating for its separation from other departments. The research underscores the need for robust institutional support to enhance both the quality of research and operational effectiveness. Consequently, it assesses the structures, scope, and processes of HSR within Ghana's healthcare system. The study concludes with a recommendation for decision-makers to prioritize the development of infrastructure to foster HSR within these organizations on an ongoing basis.

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1. INTRODUCTION

Health Systems Research is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes,

health technologies, and personal behaviors an effect access to health care, the quality and cost of health care, and ultimately our health and well-being. It has an important history that has contributed to development and implementation of health care services. Generally, HSR is acknowledged to have begun somewhere in the 1950's and 1960's where the first grant for research activities into the impact of hospital activities was given. (Stuijfzand et al., 2020)Another research indicates that, Florence Nightingale collected and analyze data to improve the quality of care and patient outcomes (Hughes & States, 2008). Further research reveals that, HSR evolved out of the field of health services research pursued in industrialized countries. For example, the US National Centre for Health Services Research was only established in 1968. By 1970, there was already substantial interest in health services research in the developing world, with a particular focus on health planning. Throughout the 1970s, discussions in the World Health Assembly drew attention to the importance of the health policy and systems research field and called for greater investment. (Griebel et al., 2015)For example in 1972 it was proposed to the World Health Assembly that greater emphasis should be placed on (1) studies on the economics of health (2) studies dealing with manpower resources and development (3) community participation and (4) the selection, specification and standardization of the procedures and techniques used by more or less skilled personnel (Landau, 2007).

In 1979, the Institute of Medicine defined Health System Research as "inquiry to produce knowledge about the structure, processes, or effects of personal health services". This was expanded upon in 2002 by Academy Health, the professional organization of the HSR field, with the following definition, which broadly describes the scope of HSR(IOM, 1979; Academy Health, 2002[1]), (Ali et al., 2018) Health service research is multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations.

HSR has the potential to make major contributions to improved decision making about health and thus promote the achievement of health-related development goals. (Landau, 2007). At the population level, it can be used to measure the performance of health care delivery and the impact of health policy on the population. For example, the National Health Quality Report in the United states tells us that, the quality of care in America is inconsistent and could be substantially improved. Also the center for Medicare and Medicaid Services reports tells us that, the American Health care is the most expensive in the world(Hughes

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[1]IOM, 1979; Academy Health, 2002

& States, 2008). According to (Hughes & States, 2008) health Systems Research has driven several policy innovations among which are prospective payment of hospitals, nursing homes, and home health care.It can also provide important information about disease trends and risk factors, outcomes of treatment or public health interventions, functional abilities, patterns of care, and health care costs and use. HSR can also lead to significant discoveries, the development of new therapies, and a remarkable improvement in health care and public health(Murphy et al., 2013).

Despite the importance of Health Systems Research, there are several challenges to successful study and implementation of HSR findings across the globe. According to (Damschroder et al., 2009) many interventions found to be effective in HSR fail to be translated into meaningful patient care outcomes across multiple context. According to (Woodward et al., 2017)There is a need for more sustainable support, including commitment to and long-term funding of HSR in FCAS; investment in capacity building within FCAS to meet the challenges related to implementation of research in these complex environments; relationship and trust building among stakeholders involved in HSR, particularly between local and international researchers and between researchers and participants; and innovative and flexible approaches to research design and implementation in these insecure and rapidly changing contexts.

Ghana has recognized the role HSR plays in policy formulation and implementation by establishing the Health Research Unit (HRU) in 1990 now Research and Development Division (RDD) under the Planning, Policy, Monitoring and Evaluation Division (PPME). According to Ghana Health service website, The RDD became a functional Division in January 2009 with the aim to strengthen, harmonize, coordinate and support research for health sector policy and programme development and implementation. The RDDkey mandates to generate information through relevant research to strengthen decision-making, set health priorities, efficient resource allocation, and inform health intervention planning and implementation in order to deliver better health services to improve health status of the Ghanaian population.

A Director who is responsible for the overall coordination of the activities of the Division and oversees the functioning of the various Departments heads RDD: namely Research; Ethics and Research Management; Dissemination, Documentation, Advocacy, and the Research Centres. The Division has three research centres in Navrongo, Kintampo and Dodowa and collaborates with other research institutions in the conduct of its activities to achieve positive results of its set goals. RDD has experienced research staff and the capacity to recruit and train additional staff for projects when necessary. Staff of RDD is made up of Scientific and Administrative personnel. The Scientific Team is a multidisciplinary team with expertise in medicine, public health and related fields,

laboratory medicine, social sciences. Experienced administrators, accountants and secretaries support the scientific team.

According to the college of Humanities, the wide and varied socio-economic, cultural and political backgrounds of individuals and groups in the development arena shape University of Ghana, policy development in Ghana remains crowded with several actors, ideas, strategies and theories and its meaning. (Gao & Sunyaev, 2019). The process for the research agenda according to the National Research Agenda includes the compilation of research areas in Districts, Regions, Programs, Divisions and Regional Hospitals within the Ghana Health Services, stakeholder consultation and prioritization by staff of different categories within the Ghana Health Services, feedback to District, Regions, Programs and Divisions for input on prioritization, Presentation at the GHS Directors meeting for inputs, compilation of outputs from the GHS stakeholder and Directors meeting, stakeholder consultation within RDD for inputs by health researchers, RDD internal workshop to draft document for in preparation for broader stakeholder meeting, final high level stakeholder consultation involving other research institution outside the Ghana Health Service, Development Partners and School of Public Health among others.(Houghton et al., 2020).

2. MATERIAL AND METHODS

Research Type

The research type was non-intervention with Qualitative and Quantitative approaches. This approach is intended to compensate for any shortcoming during the data collection process and for triangulation. Generally, quantitative research method is seen as the conventional in studies and is considered to be "objective" while the qualitative research method is seen as "subjective" and "descriptive" and its legitimacy often needs to be proven in organization studies. In this study, both qualitative and quantitative approaches were employed.

Research Design

Descriptive cross-sectional survey design based on the objectives of the study.

Study Population

Management of GHS and Staff of the three research centres.

Study Site

Kintampo, Navrongo and Dodowa research centres. Kintampo is located in the Brong-Ahafo region of Ghana, Navrongo in the Upper-East region and Dodowa in the Greater Accra region of Ghana'

Sampling Technique:

Non-probability sampling technique was used for the study since it is largely a qualitative research. A purposive sampling technique was employed.

Sample Size: A representative sample of the staff of the three centreswere employed in the determination of the sample size. A total of 300 people were enrolled in the research. That is the Director-General of Ghana Health Service, the Director Research and Information Management System (RSIM) of the Ministry of Health (MoH), the Director of Research at GHS, three heads of the intuitions and 294 staff members of the three institutions

Data Collection Techniques: Mixed methods of data collection techniques were employed as per the specific objectives. Document/desk reviews and structured interview were used, where five key top management members were engaged.

Data analysis: Data was analyzed using SPSS software. Statistical tests used were P-Values and Chi-Squares and Regression Analysis were used.

Ethical consideration: Ethical clearance were obtained from the GHS ethical review committee as well as permission obtained from the heads of the research institutions.

Time schedule

The time schedule for the research work was based on the University's calendar. The schedule was from September to December 2018. However, data collection began from December 2018 after the University approved the proposal.

Societal and Scientific Relevance

This research addresses a number of significant issues for both the research community and health care stakeholders alike. The findings will help strengthen the three research institutions to improve their activities.

3. RESULTS

Presence of organogram in organizations

A question was posed to 300 respondents to determine if their organizations have an organogram. Hundred percent (100%) responded yes. This is shown in the figure below.
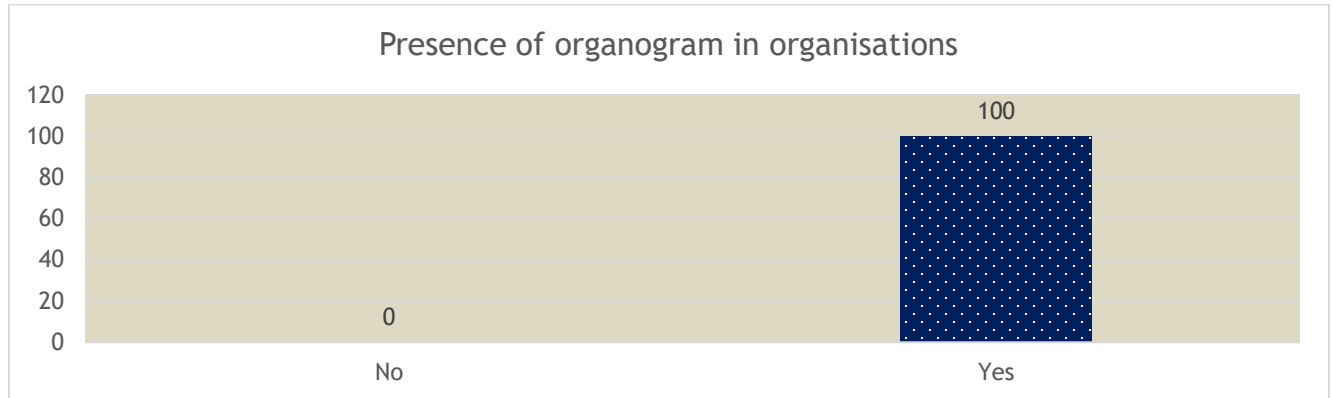

Structure of the organogram

The researcher went further to ask if respondents were satisfied with the structure of the organogram. Out of five respondents, interviewed 60 % were satisfied with the current structure of their organogram while 40 were not satisfied.
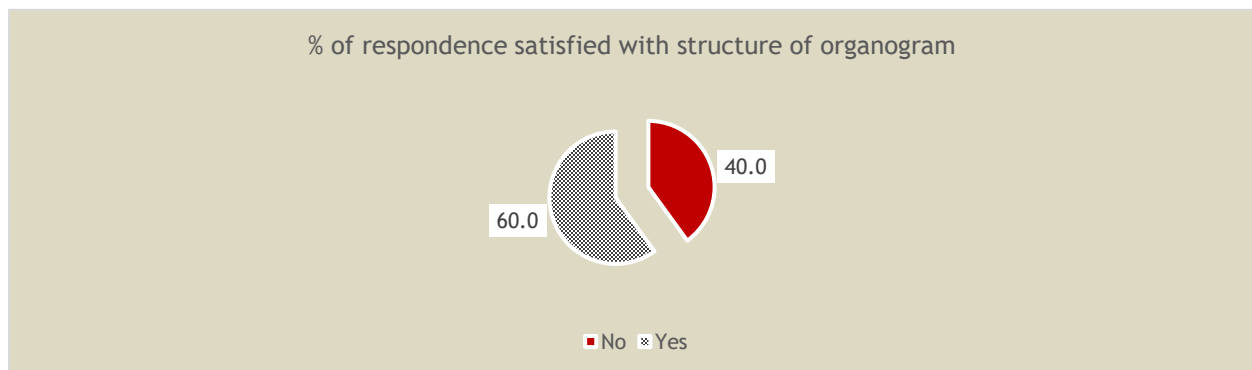

Rating of physical structure

The researcher also enquired to know how respondents rated the physical structure of their organisations. From a rating   poor, good, very good and excellent. Analyse shows that about 80% believes the physical infrastructure is good.

Respondents' rating of the physical infrastruture

Excellent: 20.0
Very Good: 40.0
Good: 20.0
Poor: 20.0
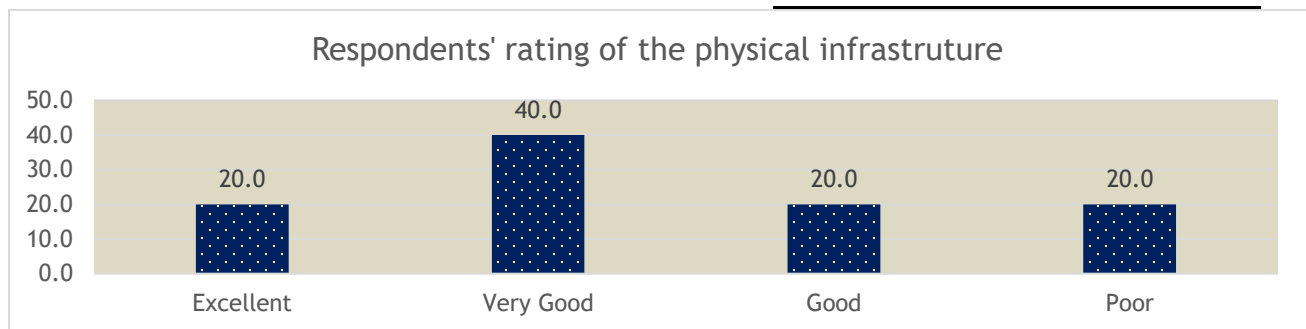
Availability of the law or Act of parliament

Here, the respondents were asked about the availability of the law or act of parliament that established their organisation. Respondents unanimously said, there is an act of parliament under which their organisation operate.

Availability of law or act of parliament

Yes: 100.0
No: 0.0
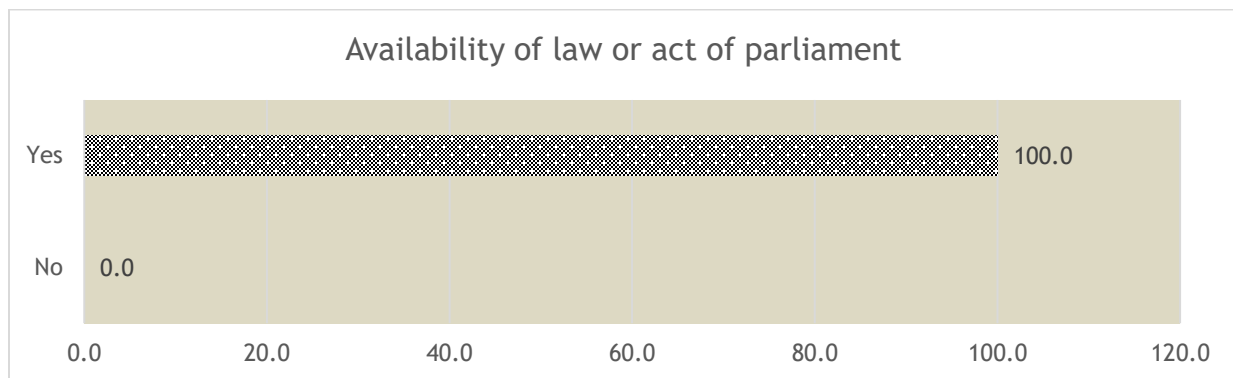
Satisfaction with the current law

While 80% said they were satisfied with the current law, 20% responded they were not satisfied.

Respondents' satisfied with the current state of the law

No: 20.0
Yes: 80.0
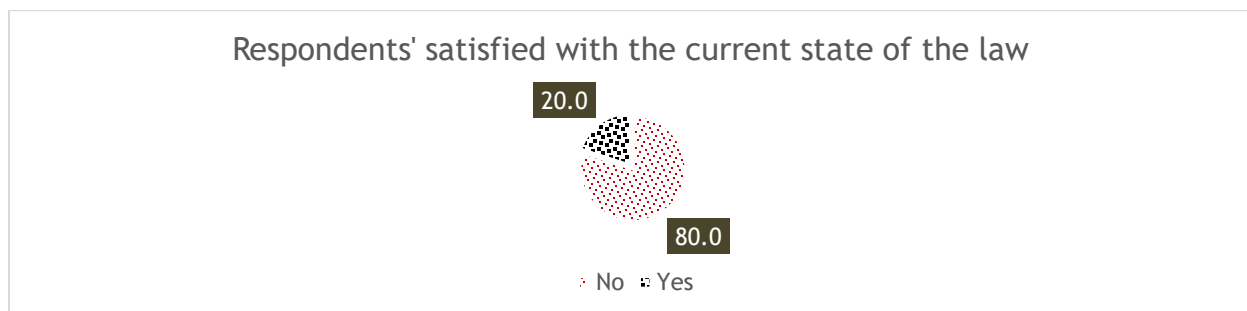
Assessment of Human Resource

Availability of staffing norm

The researcher enquired to know about the availability of staffing norm in the organisation. Respondents unanimously said there are staffing norms in their organisations as indicated in the figure below.
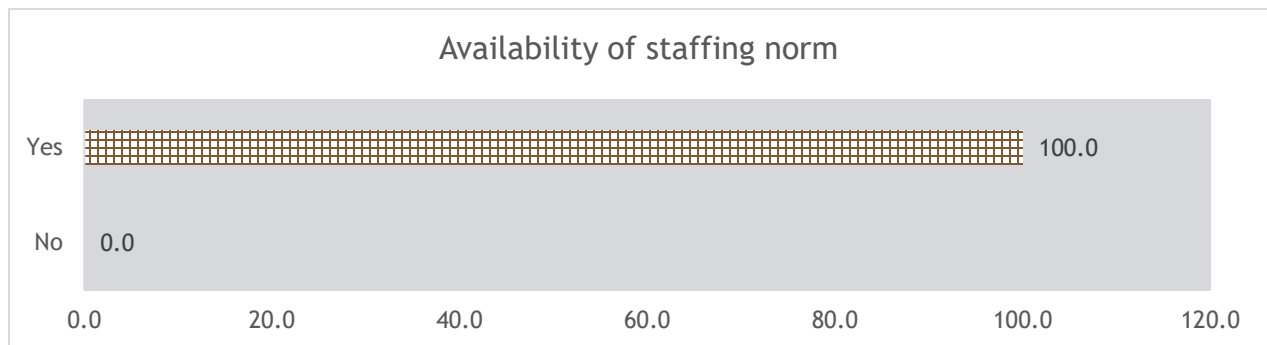
### Satisfaction with human resource situation

Ninety five percent (40%) of the respondents also said they were satisfied with the human resource situation in their respective organisations while 60% said they were not.
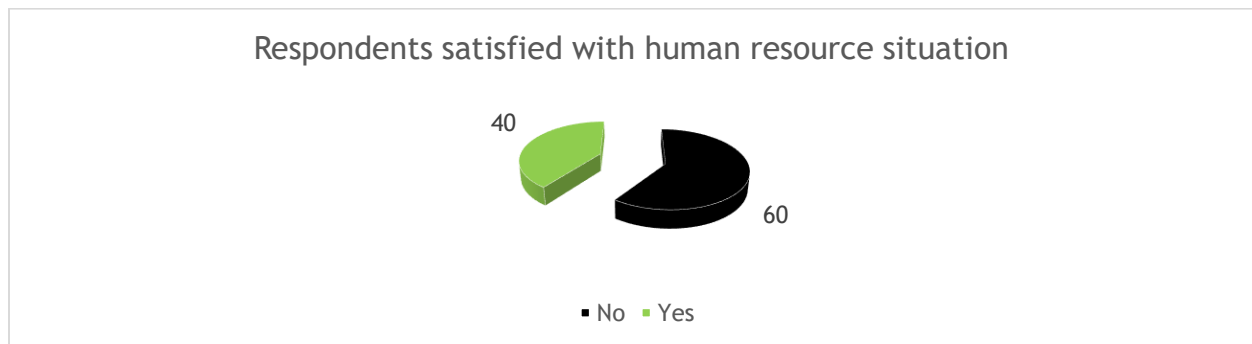
### Protocols Guidelines and Processes

Availability of research management policy and guidelines

In a assessing the protocols, guidelines and processes, 40% of the respondents said research management policy and guidelines were available in their organisation while 60% said they had no research policy and guidelines in their organisations.

Availability of research manangement policy and guidelines
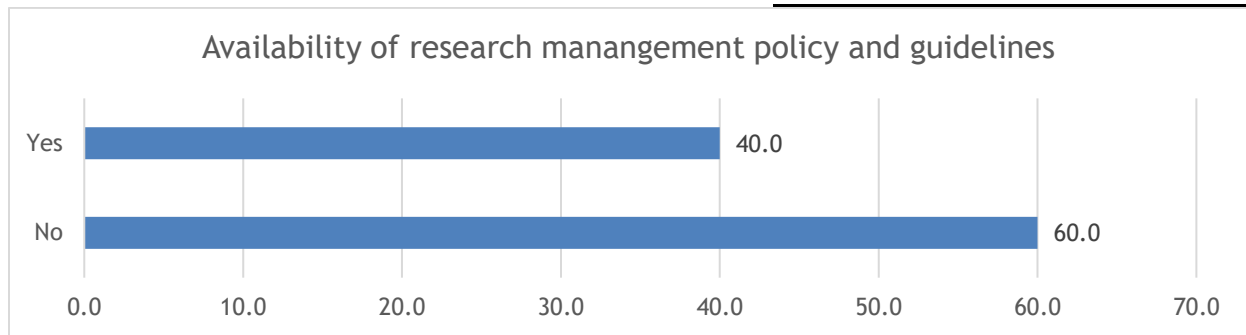
Listing of priority health research problems

The researcher also sought to find out whether there is a national listing of priority health and health system research problems. Forty (20%) of respondents said there is a national listing of priority health and health system research problems while 60% said there is no national listing of priority health and health system problems. The figure below shows the scores:

Listing of priority health and health system research problems
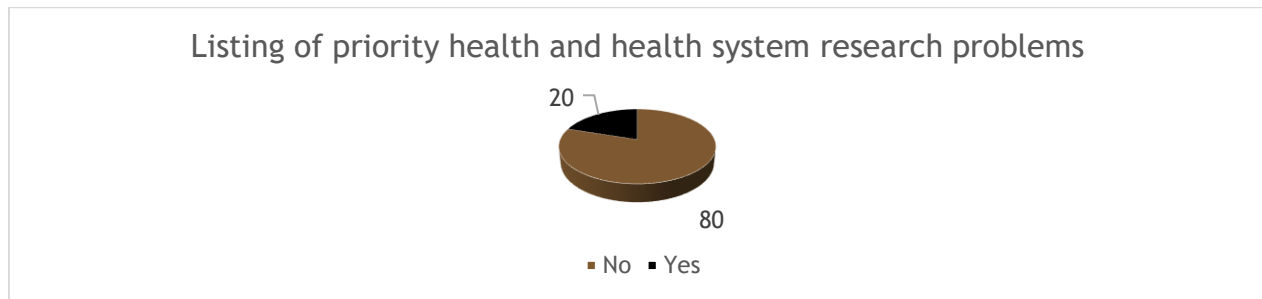
Credibility of priority health and health system research list

The researcher went further to know whether the list was credible. Out of 5 respondents, 60% said the list was credible while 40% said the list was not credible.

Credibility of priority health and health system research list
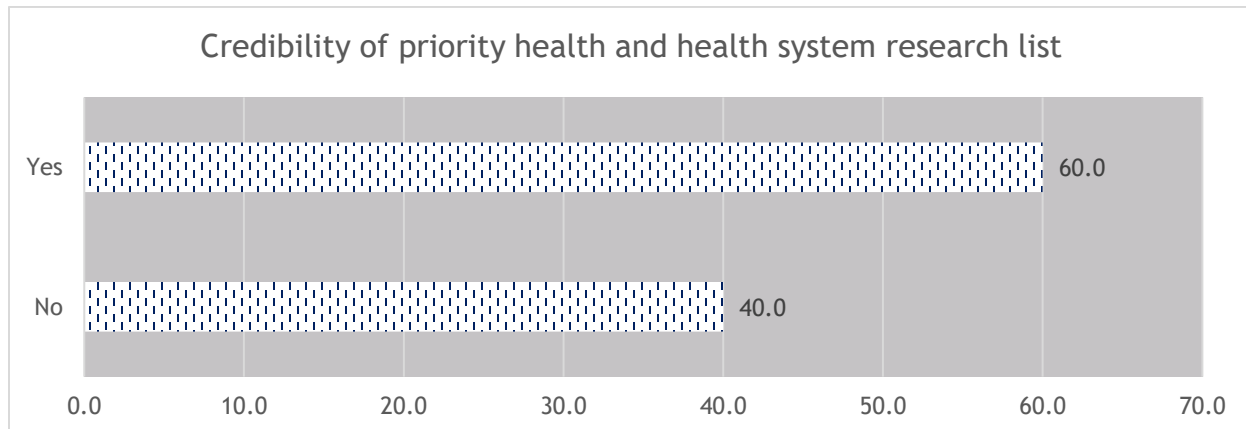
The respondents were asked about the availability of adequate data on health impact and potential economic benefits of health research in Ghana. 80% responded to the affirmative that, data is available while 20% there is no available data for research as indicated in the figure below.
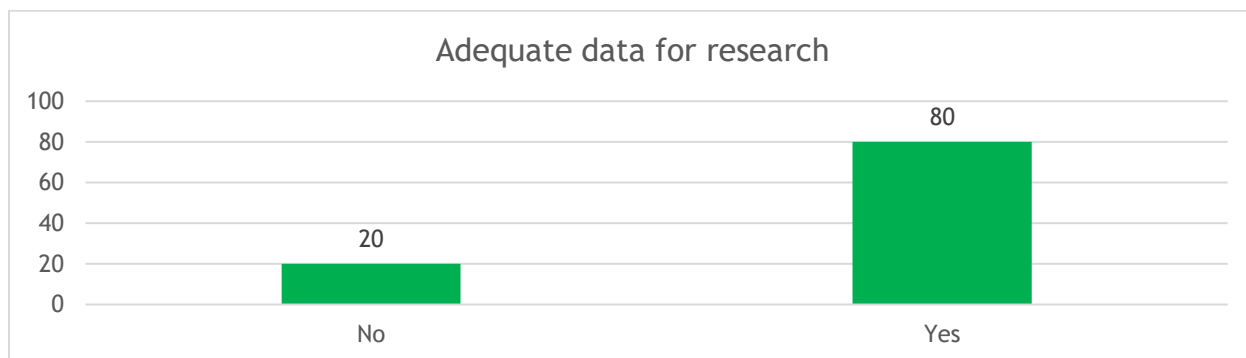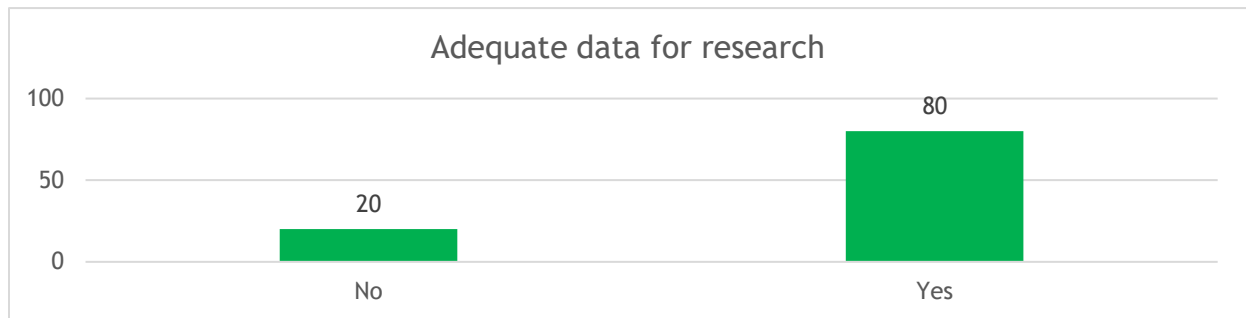
Key priorities of the Research Institutions and how they have Significantly Contributed to Health Policy Development, Implementation, Monitoring and Evaluation.

Presence of strategic plan in organization

Managers were asked about whether they had in their organization, a strategic plan. Out of the total 5 respondents interviewed 4(80%) of them said their organizations have a strategic plan while remaining said they had no strategic plan.
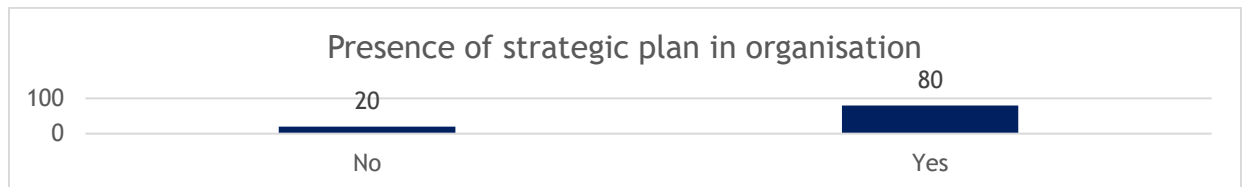
Age of strategic plan

All respondents interviewed (5/5) said they have an annual work plan representing 100% of respondents. This is shown in the graph below.
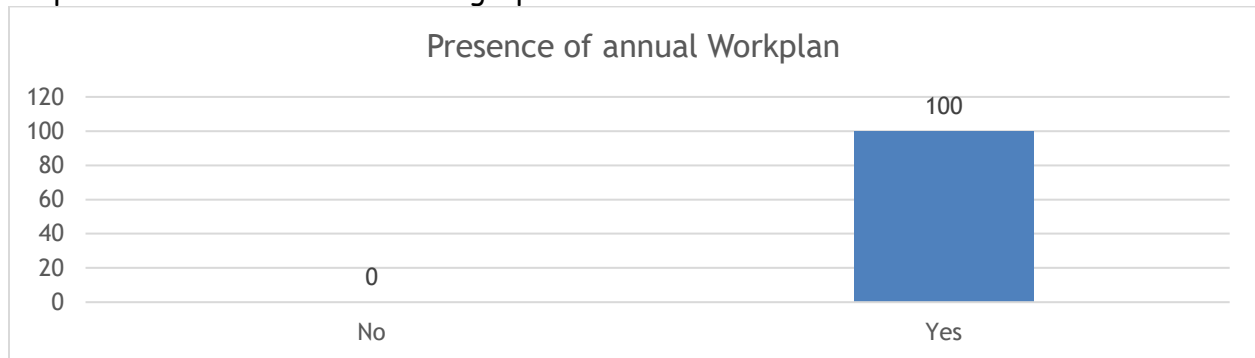
4. DISCUSSION

Organogram of the research institutions

The results of this study show that, all the organizations have an organogram. The availability of an organogram is a significant indication of a strong foundation for research to strife. However, research as a component of this structure did not receive the needed support and attention as the researcher probed further. There was a little dissatisfaction with the structure of the organogram as some respondents felt that, research has not been given the attention it deserves in terms or its placement within the organogram and resources and there needed to be separated from other departments.

Physical structures

Physical structures of organization from the study are generally good in terms of space, comfort and location. Contrary to a general thinking that, there is poor infrastructure in these organizations, significant number managers think otherwise. This however do not apply to infrastructure at the lower levels as these responses came from managers of institutions/originations. Managers, however, wants to see improvement in the following areas of infrastructure such as functionally designed buildings purposefully for HSR, considering the possibility of dealing with highly pathogenic micro-organisms. Again, a significant consideration is given to request for and the use of ultra-modern technology for the advancement of HSR in the health sector of Ghana.

Legal framework

Concerning the legal framework under which these institutions operate, this research results indicates that all institutions are operating under a legal frame work. Some of these laws included the GHS and Teaching Hospital Act 1996, (Act 525) and other related ones. Having these legal backing in place provides significance and confidence to research and its implementation in the country. It will definitely allow external and internal partners to share and contribute in the development of the health system from the findings of the research. Significant number of respondents was satisfied with the current state of the law while few were dissatisfied. For instance, the Act 525 does not explicitly recognize the mandate of HSR. It needs to be given more attention from the legal point of view.

Scope of work

As far as HSR in Ghana is concern, this research shows that, the spectrum of health research among health institutions include Biomedical research, Public health research, health policy and systems research, environmental health research, social sciences and behavioral research, operational research and health research as part of general "science and technology" research. The research spectrums that are most engaged into were public health research, Health policy and systems, operational research, social science and behavioral research, biomedical research and environmental research according to the order of engagement per the research results.

In terms of key stakeholders of institutions of respondents, development partners such as UNFPA, UNICEF, JICA, USAID and KOICA were prominently mentioned. Also, political structures such as MMDAs and parliament were mentioned as key partners. Civil Society Organizations and research institutions were also identified as key stakeholders from all the five respondents interviewed. The research did not include in details their roles in HSR. However, in terms of public health research like sentinel surveys and independent cluster surveys both technical and financial support is mostly received from some of these stakeholders.

In terms of the inputs of "users", that is; communities, organized civil society and others input into the governance of public resources that respondents manage, the GHS health system for instance featured in the interview as system that enjoys community support through the implementation of CHPS programme. Community owned structures and governance are put in place to manage health infrastructure including the compound, as well as the resources that are mobilized for health care development within communities. Some of these structures used are the CBAs, CBSVs and TBAs. In most of the cases, community durbars, surveys and interviews are avenues for individuals within the community to contribute into the governance of the community

Human Resource (Staffing)

This research shows that, human resource situation is adequate across the institutions within the researcher interview area. It can be said that all these institutions have staffing norms with more than 90% of these placed on government payroll. Less than 10% are paid on IGF. It however important for institutions to recruit the right mix of staff since the background of some of these staff do not currently fit their job responsibilities in these institutions. There was therefore some dissatisfaction regarding the human resource situation of these organizations. The right mix of staff will provide the needed human resource base to pursue the organization's research agenda.

Protocols, guidelines and Processes

There are research management policy and guidelines where data on national health research activities are systematically collected, analyzed and disseminated in most organizations but not in all. Most of the existence ones identified have not been reviewed per the guidelines and therefore have the tendency to lose their significance in HSR. It is important for institutions to develop these policies and guidelines, where capacity is necessary to do these, financial support in terms of training will be needed since very little budget is made available such an important area. One weakness identified is that, there is no national listing of priority health and health system research problems. This situation does not support a strong HSR agenda. There is a need to priorities especially where resources are limited. The list must also be established in a credible manner, updated, communicated and used for policy-decisions.

In terms of whom these researchers and institutions are accountable to respondents mentioned that, they are accountable to their superiors. There is adequate data on health impact and potential economic benefits of health research in Ghana. In terms of health research financing in institutions, respondents indicated that, it is very poor and mostly not reliable. There are no government allocation and monitoring mechanism for government expenditure on health Systems research. This is largely because; much attention from government has not been given to HSR in the country.

The institutions however put in place innovative mechanisms as a means to sustainable funding for research. They have identified institutions that support certain relevant research areas and write for support. In addition, some of these organizations ride on routine operations to conduct some research that are not capital intensive.

Key priorities of the Research Institutions and how they have Significantly Contributed to Health Policy Development, Implementation, Monitoring and Evaluation.

In assessing the direction of these organizations, this research sought to find out about the availability of a strategic plan and an annual work plan in principle, the relevance of the plan and how they are achieving the content of the strategic plan and annual work plan in these organizations. Though it can be said that strategic plans and annual work plans are available in organizations, their effectiveness in achieving objectives set out cannot be said absolutely. The strategic plans were all current, spanning a period of three years on the average. Regardless, few organizations do not have strategic plans. Where strategic plans were available, there were also annual work plans for these organizations. Some strategic plans however, did not set out the HSR agenda, which is an indication that priority of research is weak in these institutions.

Three key priorities for the last five years of the strategic plans as mentioned from respondents included; increasing access to health care, promoting good governance and sustainable health financing. Others were institutional strengthening, monitoring and supervision, training and development, research and promoting collaboration with development partners and stakeholders.

On the average achievement of the key research, priorities have been above average. Bridging the equity gap and making health care coverage accessible to all as contained in the vision of UHC has so far been well achieved. Strong governance systems are also in place in most of these institutions. There is strong monitoring and supervision at all levels of these organization. However, there is still a gap in health care financing in recent times. Most donor partners have either withdrawn or cut down supports due to the middle-income status that Ghana has achieved as a country. There is therefore the need to support these institutions identify means and methods to be capable and self-financing in the near future. The Internally Generated Fund (IGF) systems must be strengthen through proper policies and accounting systems. Government must put themselves in a position to make the flow of government of Ghana (GoG) which is the Central Government direct financial support, more regular and sustainable.

Some interventions of these organizations that actually contributed to policy development in Ghana include but not limited to; The National Malaria Control Programme (NMCP)National TB/HIV Control Programme(NTACP), National Health Insurance Programme (NHIP), Guinea-worm Eradication Programme (GWEP), Safe-Motherhood Programme among others. These interventions have all influenced policy development and implementation across the health sector of the country. Participants could not however mention any research work that was carried out because of call from the national health system in isolation independently. The contribution of these institutions interviewed to policy development in the health sector of

Ghana is highly significant according to this research. Policy development comes from the lower streams of the health system; thus, allow institutions to contribute significantly to policy development and implementation.

5. CONCLUSION

Health services/systems research: scope and significance for policy development in Ghana's health sector is the main topic that has been discussed in this research work. It can be said that, the scope of Health System Research in Ghana, is broad. In Ghana Health System Research has covered wider areas such as biomedical science, public health, health policy and systems, environmental health research, social sciences and behavioral, operational research, and health research as part of general "science and technology" but not enough topics have been researched into. This is because; there is no enough motivation for research in these areas as barriers are more intimidating. However, it is significant to mention that, Ghana has made a lot of progress in recent time especially in the area of clinical and public health where through many years of research, vaccine for malaria has been produced with clinical trial ongoing. The future of health system research in Ghana remains promising given that most of the challenges identified during the research are addressed especially regarding government prioritization and funding. This research found out that, there are well-established structures within the health system of Ghana for research to strife. Almost all Ministries, Departments and Agencies have established organograms with research departments in most cases a key component of the structure. Health Systems Research is has become part of the health care industry in Ghana. With this great awareness and recognition of the subject matter in the health system, policy makers need to recognize key the challenges that confront this field of work and provide solutions.

Conflict of Interest Disclosures
The author(s) declared no potential conflicts of interest regarding the research, authorship, and/or publication of this article.

Author Contributions
The author(s) confirms being the sole contributors of this work and approved it for publication.

Data Availability
The data can be obtained upon request from the corresponding author.

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