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Applicability of the World Health Organization's Healthcare System Framework: A Consensus Development Study in Libya

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Abstract

Introduction: The World Health Organization (WHO) Health Systems Framework (HSF) with its 6 building blocks is a widely accepted tool for accurate evaluation of health systems. However, its role in the developing world has not been widely assessed yet. **Methods:** Six Questionnaires with 5-point Likert-scale were designed and distributed to all the attendees of Libya Health 500 (LH500) Conference, and collected just before the group discussion of Libyan health system's session. **Results:** There were high levels of agreement of the respondents to the questionnaires items about the 6 building blocks. The application of evidence-based medicine and equal provision of health service to all, received the highest levels of agreement. Most of the attendees agreed that health services should be paid by the health insurance system, as it has many advantages, including the peace of mind for the public. The fairness and efficiency of the workforce and the establishment of regulatory mechanisms to address the needs of the health workforce had a high level of agreement. Moreover, a functioning health technology requires an effective supply and distribution system of technology elements. The participants agreed that health information technology is important to improve healthcare services and to prevent financial and administrative corruptions. **Conclusion:** It is feasible to adapt the WHO-HSF to identify the needs and ways to enhance health systems in the developing world. The Libyan healthcare providers were fully aware and committed to the need for the applicability of the WHO-HSF to the National Health Service in Libya.

Keywords: assessment framework; feasibility; healthcare service; healthcare system; Libya

Introduction

Health is defined as "A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (1). A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health (2,3). The rudimentary health system that existed in Libya in the last four decades was due to neglect, poor funding, corruption and lack of any initiatives to update the healthcare system in general. This system deteriorated further and almost collapsed during the 17th February revolution, 2011, due to high demand and lack of supplies.

The Libyan Ministry of Health (MoH), in collaboration with the World Health Organization (WHO), held the Libya Health 500 (LH500) Conference in August 2012 to evaluate the Libyan health system using the WHO Health System Framework (WHO-HSF) six building blocks (Table 1).(4). It is essential for the development and implementation of a health system policy to have a foundation and decision-making role across these six building blockc (5). There is a real need to establish a framework which presents the first step towards developing a tool for assessing healthcare planning in high income countries (6). A complete report of health system performance must guarantee that quantitative pointers are complemented by qualitative information (7). This article explores the perception of the Libyan healthcare workers regarding the six building blocks of the WHO-HSF and its applicability to building a new National Health Service in Libya (8,9).

Methods

Design and setting

The study was conducted in collaboration with WHO and it's Eastern Mediterranean Regional Office (EMRO). A focus group discussion (n=6) of each WHO-HSF building block was held in Tripoli, Libya. Health system experts used a structured approach starting with clarifying the concepts, and then evaluating the current status of the relevant health system block in Libya, thereby identifying the strengthens, weaknesses, and major deficiencies (8,9). The five hundred attendees of the conference Libya Health 500 (LH500) (4) were a selected group of national healthcare providers with a representation from all over the country and all sectors of the healthcare workforce. Building block groups were formed through stratified random sampling (10) to represent the various healthcare professions. These groups were used as study samples with each group responding to the survey questions about the relevant building block.

Selection of participants

The attendees consisted of both genders, had different ages and experiences, and were from all regions of the country. They came from different healthcare professions; physicians, pharmacists, dentists, nurses, health visitors, medical technicians, health administrators and health planners. They debated the six health system building blocks and their relevance to the country's health service over a three day period.

Questionnaires

Questionnaires relevant to each session (designed by the first author) were completed by the delegates before each session to explore their views and examine the relevance of the WHO six healthcare system building blocks to their thinking process and assessment of future needs. To measure the participants' attitudes towards the addressed issues, the questionnaires adopted the five-point Likert scale with ten items for each building block (11). Five degrees of agreement were presented against each item; strongly agree, agree, uncertain, disagree, and strongly disagree. The degrees of agreement of participants were translated into scores; 5, 4, 3, 2 and 1, respectively. An introductory cover letter was enclosed with each copy of the questionnaires. The aims and objectives of this survey were revised and approved by experts in the field from WHO and the Libyan MoH delegates. Tables 2 to 7 show all of the questionnaires items. The experts formed part of the pilot sample, which included 50 subjects. Questionnaires were answered anonymously and confidentiality was assured. Completed questionnaires were collected by the study authors on the spot.

Statistical analysis

The survey responses to the demographic items and to the five-point Likert scale items were entered and analyzed in SPSS (PASW release 18). Descriptive statistics were used to describe the attendees' gender, age, place of work, and duration and field of experience. Kruskal-Wallis test was used for comparing the responses by field of expertise and age, and Mann-Whitney test was used for comparing the responses by place of work, duration of work and gender. P-Values <0.05 were considered significant. The standard deviations of their responses were consistently in the order of 1 point (within the five-point Lickert scale) reflecting

Table 1. World Health Organization health service frame work building blocks.
1. Clinical governance.
2. Health care
3. Health service delivery.
4. Human resources for health.
5. Pharmaceuticals and health technology.
6. Health information systems.
Reference 5-7

Table 2. Summary of responses about clinical governance.

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. Collaboration between ministries at the level of deputy ministers plays an essential role for the health service in Libya	4.05 (1.091)	80.9
2. Importance of clinical governance for Libya	4.30 (0.914)	85.5
3. Clinical governance is the most scientific way to achieve a successful health system.	4.20 (0.896)	83.6
4. Do you favor that Libyan medical societies and colleges have strong links with international associations?	4.23 (1.147)	83.6
5. The British health model is better than all others.	3.08 (0.879)	28.2
6. Evidence based medicine is not required in Libya.	2.07 (1.199)	16.9
7. Private health service needs new laws and regulations to ensure the best outcome	4.28 (0.959)	84.5
8. Juridical matters can improve health services.	3.59 (0.919)	57.7
9. Are you supportive of offering medical services for all Libyan citizens equally?	4.44 (0.972)	88.2
10. Should evidence-based medicine be applied in Libya?	4.45 (0.766)	94.4
SD = Standard Deviation; (1) % of respondents who "Agreed" or "Strongly Agreed"		

Table 3. Summary of responses about health care finance.

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. There is nothing called free health services.	3.25(1.295)	56.3
2. Moral hazards or abuse of health facilities is the corner stone of health system corruption.	3.89 (0.934)	78.9
3. Health care abuse from the patients can be controlled by the obligatory health insurance system.	3.82 (0.915)	73.2
4. Health care finance support should be 100% responsibility of the Libyan government.	3.72 (0.865)	67.6
5. There should be a role for the Libyan citizen in relation to making a decision for the health system.	3.69 (1.008)	66.2
6. Health insurance paid by the government and a percentage by the citizen from his/her personal income can be applied in Libya.	3.75 (1.033)	71.8
7. Health insurance paid fully by the government in which every patient is in charge for his cost of treatment could be a more efficient solution.	3.02 (1.188)	36.4
8. If financial support can be changed to a direct support system to the citizen can this be considered in medical treatment.	3.32 (1.049)	50.9
9. Health insurance system has many advantages including the peace of mind for public	3.28 (1.185)	52.1
10. The cost of treating the patients including the wounded by depositing the value in a saving accounts for the patients (run by governmental insurance company) for the individual patient to spend on health services only can solve the current problem of wasted finance	3.36 (0.979)	54.3

SD = Standard Deviation. 1. % of respondents who "Agreed" or "Strongly Agreed"

the relative homogeneity and similarity in the extent of differences of opinions across the items.

Results

Profile of the survey respondents

Of the 500 participants, 110 (22%) completed the questionnaires of whom 70% were from the medical field, 12% were administrators, 5% were paramedics, and 13% from other fields. The male to female ratio was 1.7:1. Ninety two (83.6%) participants were working inside Libya, and 18 (16.4%) were working outside Libya at the time of the study, but who had some professional experience inside Libya. About two thirds of the respondents were 30-50 years old, of whom 57% had more than 10 years of work experience in the health sector.

Participants' perceptions of the WHO building blocks

The levels of agreement of the respondents with the

Table 4. Summary of responses about health service delivery

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. The best health service provider is the government	3.27(1.162)	47.7
2. The best health service provider is the private sector	2.60(0.999)	21.5
3. The best health service provider is government with optional integrated private service	3.98 (0.981)	80.4
4. Patients should not present to hospital without referral from primary care unit / centre	4.05 (1.185)	79.4
5. Private service ideally should be separate from government service	3.21 (1.252)	49.5
6. Private health service is ideally within a government hospital (private section)	3.04 (1.115)	38.3
7. Private health service separate from government but with shared personnel	3.18 (0.989)	47.7
8. Patients can present themselves to any Primary care unit anywhere in the country	3.83 (1.068)	72.9
9. It is ideal to have multi-providers (university, military, police, private.etc.) rather than a single provider units	3.98 (0.801)	84.1
10. Patients should pay emblematic fees for medical checks, investigations, procedures and medications	3.15 (1.142)	47.6

SD = Standard Deviation;1. % of respondents who "Agreed" or "Strongly Agreed"

questionnaires' items about the six building blocks are presented next.

Clinical governance: Items 10 and 9, about the application of evidence based medicine in Libya and offering health service equally to all, received the highest levels of agreement of the respondents (Table 2). Items 2, 7, 4, 3 and 1 received the next highest levels of agreement with ratings exceeding 4.0 and level of agreement exceeding 80%. The lowest levels of agreement were with items 6, 5 and 8.

Health care finance: Respondents showed higher levels of agreement with items 2 and 3 (medical dangers and abuse of health facilities make the cornerstone of health systems corruption, and health care abuse from the patients can be controlled by the obligatory health insurance system) (Table 3). Items 1, 7, and 9 received the lowest levels of agreement, reflecting the respondents' disagreement with the proposition that all health services should be paid for by Government or through some form of co-payments.

Health service delivery: Respondents agreed most with items 4 and 3 which concern the requirement of primary care referral for receiving services in hospitals, and that the best health services are provided by the government through self-governance or public private partnership (Table 4). The lowest levels of agreements were for items 2 and 6 which state that the private sector is the best provider of health services, and that private health services are ideally delivered within a government hospital.

Human resources for health: The highest levels of

Table 5. Summary of responses about human resources for health

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. Well performing workforce is central to achieving health	3.89 (1.066)	73.7
2. A successful workforce is one that is responsive to the needs and expectations of people	4.18 (0.795)	89.5
3. The workforce needs to be fair and efficient to achieve the best possible outcomes	4.45 (0.958)	89.5
4. Arrangements for achieving diversity in sufficient numbers are a requirement for developing a health workforce	3.96 (0.791)	76.3
5. A payment system giving the right incentive is a requirement for developing a health workforce	3.96 (1.051)	76.3
6. Regulation mechanism systems ensuring needs are met is a requirement for developing a health workforce	4.30 (0.674)	90.7
7. Hospital managers should consult clinical staff before making management decisions that affect patient care	4.22 (0.988)	85.5
8. Mechanisms for mutual cooperation of all workers and associates are a requirement for developing a health workforce	4.09 (0.867)	80.3
9. Current staff salary should be supplemented with "fee for service" to enhance staff commitments to their patients	3.78 (1.115)	65.8
10. Current salary should be increased regardless of staff commitments	3.05 (1.365)	41.3

SD = Standard deviation; 1. % of respondents who "Agreed" or "Strongly Agreed")

agreements were with items 3, 6, and 7 regarding the fairness and efficiency of the workforce, establishment of regulation mechanisms to address the needs of the health workforce, and consultation of clinical staff in patients care decisions (Table 5). The lowest agreements ratings were in items 10 and 9.

Pharmaceuticals and health technology: Respondents agreed most with items 4 and 9 which state that health technology should not be introduced without evaluation tools, and a functioning health technology system requires an effective supply and distribution system of health technology elements. Items 2 and 10 received the least levels of agreement (Table 6).

Health information systems: Items 9, 4, 1 and 3 received the highest levels of agreement (Table 7). On the other hand, items 2 and 10 were the least agreed upon.

Variation in perceptions and their determinants

Differences in participants' responses were observed most often according to gender, age, field of experience, and to a lesser extent according to the years of experience and place of work. These are elaborated below:

Gender: Males and females disagreed significantly about Health Care Finance in items 2 and 3 (p-values = 0.042 and 0.048, respectively), Health Service Delivery in item 3 (p-value = 0.012), Human Resources for Health in items 2 and 3 (p-value = 0.039 and 0.005), and Health Information System in items 1, 7, 8 and 10 (p-value = 0.013, 0.023, 0.019, and 0.025). Females expressed higher levels of agreement in all these items except item 3 of Health Service Delivery.

Table 6. Summary of responses about pharmaceuticals and health technology

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. The ultimate aim of health technologies (HT) is to potentiate the capacity of a health system to reach its goal i.e. to promote, restore or maintain public health	3.27 (1.191)	48.5
2. Technology innovation will be one of the major driver of health care cost in the coming years	2.61 (0.979)	20.8
3. Health technologies include instruments, equipment, drugs and procedures used in prevention , diagnosis, treatment and rehabilitation of health conditions	3.83 (1.040)	74.3
4. Introducing health technology innovation without an evaluation tool can increase cost without an increasing of efficiency and benefit for patients	4.01 (1.145)	77.2
5. Health technology assessment (HTA) , is a multidisciplinary field of policy analysis at the macro (health policy), meso (institution) and micro (professional) levels	3.16 (1.231)	45.5
6. Decision making level of HTA application has to be progressively decentralised to achieve its ultimate goal	3.07 (1.116)	39.6
7. HTA must be based on rigorous scientific methods, multidisciplinary approach and an ad hoc skilled personnel	3.18 (1.014)	47.5
8. HTA must be integrated with processes in the health care system (macro-level) and with organizations (meso-level) i.e. decision making process, purchase process and supply process	3.78 (1.083)	70.3
9. Key component of a functioning system of HT is an effective supply and distribution system of HT elements to ensure universal access with focus on the poor and disadvantaged	3.90 (0.866)	80.2
10. HTA should be a valuable tool to create a continuously updated national list of essential medical products, diagnostic and treatment protocols and standardized equipment per level of care	3.07 (1.177)	44.6

SD = Standard deviation, 1, % of respondents who "Agreed" or "Strongly Agreed"

Age: Significant differences in respondents' agreements according to age were expressed about Health Service Delivery in items 2 and 7 (p-value = 0.012 and 0.018), Pharmaceuticals and Health Technology in items 2, 3 and 7 (p-value = 0.018, 0.014, and 0.047), and Health Information System in items 1, 2, 4, and 10 (p-value = 0.023, 0.027, 0.003, and 0.009).

Level of expertise: Respondents from different fields of expertise significantly disagreed about Clinical Governance in item 3 (p-value = 0.004), Health Care Finance in item 5 (p-value = 0.017), Health Information System in items 1, 2, 4, 7 and 10 (p-value = 0.000, 0.000, 0.009, 0.000, and 0.009). The administrative group expressed often lower levels of agreement with these survey items.

Years of work experience: Significant disagreements with the survey items according to years of work experience were observed in Health Service Delivery items 2 and 4 (p-value = 0.008 and 0.025), and Pharmaceuticals and Health Technology items 2 – 4 (p-value = 0.031, 0.032, and 0.018). Lower levels of agreement with these items were expressed by the more experienced respondents.

Work at home or abroad: Significant levels of disagreement among respondents working inside and outside Libya were observed in Human Resources for Health item 1 (p-value = 0.012), Pharmaceuticals and Health Technology item 2 (p-value = 0.045), and Health Information System item 7 (p-value = 0.018). Respondents working outside Libya expressed less agreement with these items.

Table 7. Summary of responses about health information system

Item of the questionnaire	Mean (SD)	Level of agreement[1]
1. Health information system is essential to develop a well-functioning health system	4.14 (1.146)	76.7
2. Clinical governance is only possible with good information on health challenges	3.47 (1.191)	58.9
3. Good information on health challenges needs a broader environment in which health system operates	4.03 (0.957)	76.7
4. Progress in meeting the health challenges and social projects should include household surveys	4.18 (0.839)	87.7
5. Progress in meeting the health challenges and social projects should include civil registration systems	3.81 (1.163)	75.3
6. Progress in meeting the health challenges and social projects should include epidemiological surveillance	3.66 (1.227)	64.4
7. Health information should be made accessible to health professionals, civil society and politicians	3.97 (0.897)	76.7
8. Trends and needs for human resources on distribution and adequacy of infrastructure are not possible without health information system	3.89 (1.001)	76.4
9. Using health information technology is important to improve healthcare service and prevent financial and administrative corruptions	4.30 (0.720)	90.4
10. Health information technology could be used as supportive tool for medical professions in remote areas to provide good healthcare services	3.77 (1.149)	69.9

SD = Standard deviation; 1. % of respondents who "Agreed" or "Strongly Agreed"

Discussion

Most delegates recognized the urgent need for modernization, and agreed that the process should be led by the national government, at the highest possible level. That is what we need in order to have the ability to collaborate with the MoH, being the main supervisor to service provision and regulation, and other government ministries with roles related to health and wellbeing, such as education, interior affairs, media and culture.

There was also a general agreement that the healthcare system should adopt a management style based on modern concepts, like clinical governance, evidence based practice, equity in coverage, quality assurance and efficiency. These concepts are believed to be the fundamentals of health system performance. This is in agreement with a study that was conducted by Arah et al. (12). When various financing models were discussed, the delegates' responses generally favoured healthcare systems that provide free comprehensive healthcare services. This was consistent with the authors' observation of the general public's opinion. Libyans consider their country as oil rich, and feel that the essential services, such as health and education should be fully funded by the national oil wealth. Although there was recognition that the private sector can be a valuable partner in service provision, there was no consensus regarding partial funding by individual citizens. Moreover, it was generally agreed that third parties such as employers could help in funding the healthcare. There was no strong agreement towards certain funding models, but generally, a national insurance system, run by the state, was more favoured. It is assumed/believed that such a financing model will help

to promote efficiency, fight corruption, avoid moral hazard and engage the private sector. Delegates strongly opposed the idea of funding through an insurance system where the government pays for a part of the healthcare, while the citizens pay a percentage from their personal income, and a significant portion disapproved the privatization of healthcare services.

Delegates strongly agreed with the proposition to control access to secondary care and the introduction of a referral system to ease the burden on hospitals and to manage stable medical problems locally by primary care facilities. There was a general consensus that primary healthcare and public health should remain the responsibility of the public sector, while the private sector can play a major role in secondary care through well-regulated public–private sector partnerships. There was also a significant support for encouraging large employing organizations to develop their own secondary care facilities to cater for their employees, such as the Police Force Hospital and the Armed Forces Hospital.

With regard to workforce planning, development and management, there was recognition that the healthcare workforce is the main asset in the healthcare system. Furthermore, it is believed that system modernization needs full engagement and consultation with the workforce. Modern management concepts should be introduced to make sure that the workforce is competent, responsive and efficient. The majority of respondents agreed that a regulatory mechanism for the workforce should be introduced. This is to ensure that healthcare professionals are qualified and competent to perform their duties and maintain the necessary competencies throughout their career. Workforce regulation and performance management should be matched by a fair payment system that rewards excellence and outstanding performance. There was no significant support to an unconditional rise in staff salaries. The delegates commented that a rise in salary should be on the basis of productivity.

Respondents generally agreed that the process of procurement of pharmaceuticals and health technology should be decentralized with more powers given to local and regional health authorities to control their pharmaceuticals and health technology budget, but with a central regulatory control. There was also a majority agreement that introducing a new pharmaceutical product or medical technology should be subjected to a careful evaluation process to assess its cost-effectiveness. This process should be open, multidisciplinary and based on a rigorous scientific methodology. Delegates also felt that the supply and distribution system should ensure universal access to a nationally agreed and regularly updated list of essential medical products.

The majority of respondents agreed that a modern health information system is essential to provide the necessary data, which allow evidence based modernization and development plans to take place. Accurate data that are shared openly will support modernization and reduce corruption.

A significant proportion of the delegates did not have a good command of the English language. This could prohibit many of the delegates from major contribution as only 22% of the delegates completed the questionnaire, which was a significant weakness of this study. The relatively low response rate (22%) can be attributed to the use of the English language in the questionnaire, when it is assumed that a significant proportion of the delegates may have been unable to follow the discussions very well. Moreover, it is believed that a significant group may not be well aware of modern healthcare management concepts, such as clinical governance, quality assurance, performance management and workforce regulation.

The WHO has developed a standard health facility assessment methodology which was implemented in countries such as Switzerland in 2006 and in the United Republic of Tanzania in 2008. This tool helped create a baseline database of all public and private health facilities and services across these countries, and thus they succeeded in forming the basis for a national and sub-national routine monitoring system of all six building blocks of health system (6)

In conclusion, the WHO-Health System Framework is applicable to developing countries post conflict. The Libyan healthcare providers were fully aware and committed to the real need for the applicability of the WHO-Health System Framework to the National Health Service in Libya and called for the infrastructure of the healthcare system to be built at the international standard level.

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