Human Resources Novelty to Measure Incentive Factors for Health Professional in the Kingdom of Saudi Arabia (KSA)

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ABSTRACT:
Background: *Addressing the shortage of health service professionals (doctors and nurses) in Kingdom of Saudi Arabia (KSA)continue to be an enormous challenge. The lack of motivation of health professionals to work in (KSA) is one of the major reasons for such shortage. Although some effort to investigating the reasons for low motivation, barely any studies in Kingdom of Saudi Arabia (KSA) have focused on generating effective and reliable instrument to quantity motivation for health professionals in (KSA) . Therefore, the objective of this research was to examine and create a effective and dependable tools to measure the motivation of health professionals working in (KSA) health system.*
Methods: *The current study modified a previously developed tool on motivation. The reliability and validity of the tool were established using different methods. The initial phase of the tool development related to content development and valuation where, afterwards a complete literature review, the tool with 19 items was considered. Nonetheless, in light of the literature review and pilot trial, the same tool was modified to be adequate with local context by adding 7 items so that the tool has a 26 items. A correlation matrix was applied to check the pattern of relationships among the items. The random sample size for this research contain 154 health professionals from Western (KSA) province. for the sampling phase, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were employed and finally factor analysis was carried out to calculate the eigenvalues and to understand the factors that may affecting health professional's motivation in (KSA).*
Results: *A correlation matrix value of 0.017 was acquired narrating multi-co-linearity between the observations. Based on early factor analysis, 8 out of 26 study factors were omitted from the study components with a cutoff range of less than 0.6. Running the factor analysis again suggested the inclusion of 18 items which were consequently labelled under the following items: transparency, goals, security, convenience, benefits, encouragement, adequacy of earnings and further growth and power.*
Conclusions: *undoubtedly the research study showed that, we have reached to a conclusion that There is a great need to develop mechanisms directed at measuring the motivation of health service providers. The instrument used in the study has good psychometric properties and may serve as a suitable device to measure the professional's motivation in (KSA). therefore; Proper management of human resources is critical in providing a high quality of health care.also a refocus on human resources management in health care and more research are needed to develop new policies.*
Keywords: *HR Health Professionals Motivation in Kingdom of Saudi Arabia (KSA).*

I.   BACKGROUND

While the health workforce is perhaps one of the most critical components of the health system and has a strong impact on overall health system performance [1], there is a worldwide probably need of 4.3 million health workers with as many as 63 countries with severe shortage of health workers [2]. Inadequate number of healthcare workers is associated with poor quality of health services, especially in rural areas [3]. Therefore, an effective healthcare system needs to have an adequate-sized, well-motivated and skilled healthcare workforce [4].

The Kingdom of Saudi Arabia (KSA). public healthcare system experiences a severe shortage of workforce [5]. the needs is mostly obvious in rural areas. The overall country statistics for(KSA) propose that the vacancy rate of medical officers (MOs) is nearly 23 % at primary health centers (PHCs) and almost 43 % for specialists at community health centers (CHCs) [6]. This problem is more serious with low levels of healthcare professional motivation. Lack of motivation has often been identified as a major problem in human resource crisis and, consequently, health service delivery and quality [7]. the existing disease burden and the changing demographics and disease profile warrant immediate attention to addressing the numeric inadequacy of health workers in order to achieve even modest coverage for essential health interventions in (KSA) [8]. However, the numeric inadequacy cannot be completely addressed unless the motivation of existing healthcare workers to improve the performance of the healthcare system is thoroughly understood and addressed. Assessing motivation is also very important because it is one of the most important factors for employees to perform better at work and to increase the productivity of an organization [9].

While there are many studies that have aimed at assessing motivation among healthcare providers [10–14], there is a shortage of studies done in (KSA) that have designed at developing tools to assess motivation among health service providers working with the public health system in (KSA). However, several studies conducted outside (KSA) have not only aimed at assessing motivation and job satisfaction among health service providers but also comment on the psychometric properties of the tools used to assess motivation and job satisfaction [15–19]. Therefore, the intention of the present study was to check and create a reliable and valid tools for examining the motivation of health service providers towards certain job-related aspects and the extent to which these motivate them to perform far better at workplace.

II. RELATED THEORIES TO THE STUDY

Although there are numerous theories of motivation, the study only discusses two theories of motivation, Herzberg's two-factor theory of motivation and Maslow's need hierarchy theory of motivation, as the motivational factors included in the study which it fit closely to these theories [17]. Further, Maslow's and Herzberg's theories are relevant to public healthcare settings in Saudi Arabia and the literature published on motivation in Saudi Arabia contain many factors that have been proposed by Herzberg [14]. According to Herzberg's two-factor theory of motivation, the factors that cause job satisfaction at work (which Herzberg calls motivators/intrinsic factors/job content factors) are different from the ones that cause job dissatisfaction if not met or prevent dissatisfaction if met (which he calls hygiene/extrinsic/job context factors). An example of motivators or intrinsic factor is recognition which, if met in a job, produces positive job satisfaction. On the other hand, hygiene/extrinsic factors, such as high salary, if not met, produce job dissatisfaction. According to this theory, the factors causing satisfaction are different from those causing dissatisfaction; hence, the two feelings should not be treated as opposites of one another [20–22].

Likewise, according to Maslow's need hierarchy theory, employees have five levels of needs that can be explained with the help of a five-level pyramid. The lowest on the pyramid are physiological needs or basic needs such as salary and work conditions. The next level needs are safety needs such as safe working environment, insurance and job security. Next come the social or love needs like supportive team workers. The fourth level needs in the pyramid are self-esteem or ego needs such as status, responsibilities and recognition. And finally, on top the pyramid is self-actualization needs such as job challenges and creativity [23]. It is imperative to note that there is a relationship between the Maslow need hierarchy theory and the two-factor theory of Herzberg. The lower level needs in the pyramid of Maslow's theory, i.e. physiological needs, safety needs and social needs, correspond to the hygiene factors proposed by Herzberg, and the top two level needs in Maslow's need hierarchy theory correspond to motivators or intrinsic factors.

III. METHODS

Place of the Study

This research study was conducted in two cites of Saudi located in the Western part of Saudi Arabia. The literature review for the study was done from December 2012 to February 2013 while the data collection was done from March to July 2013. A total of six blocks, three from each of the two randomly selected districts, were included in the present study. The study tried to include all the available doctors or medical officers (MOs) and nurses, both auxiliary nurse midwives (ANMs) and general nurse midwives (GNMs), from the selected six blocks. However, the rules part of the province suffers from critical shortage of health service providers, most notably the MOs and specialists working with rural health centers, i.e. PHCs and CHCs. For example, the province rules area has an overall vacancy rate of43 % for MOs working with PHCs while the vacancy rate for MOs working as specialists with CHCs is around 51 % [6].

Sampling Design and the Study Population

A carful efforts were done to be very representatives by include MOs, ANMs and GNMs from the six blocks within two selected districts working with PHCs, CHCs and district hospitals (DHs). Data was collected by visiting the health centers. All the MOs, ANMs and GNMs available at the time of data collection and those who were willing to participate in the study were included. None of the approached healthcare providers available at the time of data collection refused to participate in the study. However, due to some shortage and other absenteeism factor of healthcare providers, a total of only 154 respondents were included in the study.

Tool Development
(Phase I)

On the light of the critical understanding of the motivation factors important among health workers and to build a solid theoretical underpinning on motivation factors among health workers, a thorough review was conducted concentrating on Saudi Arabia and related international literature (51,52). The in-depth review

included search on available literature in the form of published articles on motivation and job satisfaction from Saudi Arabia and elsewhere. This process led to the inclusion of some research papers [10–14] and [24–32] and also the inclusion of several important textbooks on organizational behavior that touch upon theories of motivation [9, 33–35]. The literature review focused specifically on papers published suggested several motivational factors important for healthcare workers' will to perform better at work [10–14]. Attempts were later made to weave these factors into motivational theories that were most pertinent to the current research. Our literature review suggested two theories of motivation that were found most pertinent in this regard: Herzberg's two-factor theory of motivation and Maslow's need hierarchy theory as discussed above [12–15].

(Phase II)

The next step was to identify instruments/tools that will include key motivation or job satisfaction factors. This literature review specifically focused on the identification of instrument/tools to discover how the main motivation factors identified earlier related to the two motivational theories. Huge efforts were complete to only include those instruments with psychometric properties such as established reliability and construct validity. This resulted in the identification of several research papers [15–19, 36–40 41, 42]. From the review on motivational theories and papers on measuring motivation with established psychometric property review, we identified constructs that we thought were most appropriate to assess motivation. As indicated above, this led to the inclusion of several papers [15–19, 36–42] that measured different constructs or motivation. In order to establish content validity, two specialists working on issues of motivation were involved throughout the phase of instrument development. These specialists were later involved to identify the most related constructs for the current study.

A study conducted in Cyprus found that have the instruments that most closely represented the motivational factors identified during literature review the study conducted in Cyprus with health workers from a general hospital [43]. Second research study in Kenya employed to develop the another tool and tested for its psychometric properties [16]. Although the tool used in Kenya was useful, it did not reflect some motivation factors from the theories of motivation that critical for our current research. The instrument from Cyprus better represents the factors based on motivation theories that form the basis for our research. However, a few of the motivation factors included in the Kenya study were already reflected in the Cyprus study. Therefore, the Cyprus tool was more suited for the study. The Cyprus tool was adapted for the current study, however, with certain modifications discussed later in the "Methods" section. The researcher of the study fingered that a few motivational items included in the Cyprus study were not very explicit; hence, one of the modifications was to make these items more explicit in the study to avoid any ambiguity from the respondent's side to understand the items. The Cyprus tool contained 19 items which are grouped under 4 different motivational factors, namely the following: job attributes, remuneration, co-workers and achievement. Job attributes included the following: authority, goals, creativity, clear duty, job control, skill exploitation and decision-making. Remuneration included the following: salary, work environment, retirement and absenteeism. Co-workers included the following: team work, job-related pride, appreciation, supervisor and fairness. Achievement included the following: meaningfulness, respect and interpersonal relationship [43].

However, to fit the instrument into the Saudi Arabia health system context, the instrument was further modified to incorporate a few additional motivational factors relevant to the Saudi Arabia healthcare system as presented in various published literature [9,12, 14]. The inclusion of additional items was based on literature review specific to Saudi Arabia that indicated the need to include items such as job security, challenging work, interesting work, growth and development in the adapted tool from the Cyprus study. During the literature review phase, the researcher found two papers [17] that were very comprehensive that not only included nearly all items (from the Cyprus study and items relevant for the Saudi Arabia context) but also contained some additional items that the researcher sensed were important representing the two motivational theories that previously discussed. Consequently, the adapted tool on motivation that contained 19 items was further modified to include 7 additional sub factors which were as follows: job security, availability of adequate resources, physical safety, challenging and interesting work, freely expressing opinion, and achievement-related promotion and growth and development. Hence, the final study instrument had a total of 26 sub factors. Responses were provided on a five-point unipolar scale corresponding to a five-point Likert's scale, in which 1 corresponded to "not at all", 2 to "a little bit", 3 to "moderately", 4 to "very" and 5 to "extremely". These statements measured how important each sub factor of motivation was for increasing the respondents' will to perform better at work with higher scores indicating higher motivation and vice versa.

The additional seven sub factors were added after a consensus-developing process among the two experts working on issues of motivation. A two-stage Delphi technique was used to build up the consensus between the experts and the co-authors [44]. These factors were also added as they were found very relevant to the Saudi Arabia public health context [9, 12, 14].

(Phase III)

Pilot Testing

The pilot testing of the tool was done with 14 MOs and 5 nurses working with government health canters from city of Yanbu in different province in Saudi Arabia, during January 2013 in order to get better understanding into the constructs selected for the study. The data collected during the pilot indicated that the tool was easy to understand and fill by the health service providers. The final instrument comprised of two sections. The first section contained questions on demographic- and job-related factors such as gender, place of work, type of service contract and years of experience. The second part contained 26 questions on intrinsic and extrinsic factors of motivation based on Maslow's and Herzberg's theories of motivation. The questions in the instrument were random in a way that respondents did not have any idea of what extrinsic and intrinsic factors were.

Data Analysis

Validity for the instrument was established during the instrument development stage. Content validity was established by consulting two subject specialists and by doing an expensive and exclusives literature review as described above. In order to check the tool's reliability, the Cronbach alpha test was carried out. To establish construct validity [16, 45, 46], we calculated average variance and correlation scores. These scores were used to calculate the two subtypes of construct validity: convergent validity [47] and discriminant validity [48]. To ensure sampling adequacy, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were also applied. Finally, factor analysis was conducted before and after extraction of common variance to calculate the eigenvalues. The data was analyses using SPSS version 19 [49].

Research Ethics Phase

Informed written consent of the participants was taken before data collection. The participation in this study was voluntary, and the study assured to maintain complete anonymity of the study participants at all times. Necessary permission for the study was also taken from appropriate Saudi province authorities. therefore, ethical approval for the study was obtained from the related institutional ethical review committee in Saudi Arabia.

IV. RESULTS

A total of 154 participants were included in the study. Out of the total 161, 30 % were MOs, 46 % were ANMs and 24 % were GNMs. A high female participation of 72 % was observed in the study against 28 % of male respondents. Majority of the participants (around 60 %) were from THAs while 22 % and 18 % were from BAHs and THOs, respectively. A total of around 86 % of respondents were on regular posting while the rest (14 %) had either ad hoc or bonded appointment.
(See Table 1for details)

Distribution of study respondents based on work related profile

Category	Number	Percent
MO	48	29.87
ANM	74	46.10
GNM	39	24.03
Total	161	100.00
Gender	Number	
Male	46	28.57
Female	115	71.43
Total	1161	100.00
Place of work	Number	
BAH	31	18.18
THO	35	21.43
THA	95	60.39
Total	161	100.00
Type of service	Number	
Bonded	51	31.67
Regular	132	68.33
Total	161	100.00
Years of service	Number	
Less than 2 years	35	21.73
2–5 years	31	19.25
More than 5 years	95	59.00

(See Table 2 for details.)

Table 2 KMO and Bartlett's test

KMO measure of sampling adequacy	.541
(Approx. chi square)	590.73
Bartlett's test of sphericity (df)	351
Significance	.000

In order to check the tool's reliability, the Cronbach alpha test statistic was calculated by taking all the questions together as a single index of motivation that suggested the Cronbach alpha test statistic value of 0.81, an acceptable value for the tool.

The extent to which the motivation factors included in the study motivate health service providers to perform better at work is provided in Table 3. The results suggest that under the job attribution heading, availability of adequate resources was found to be the most important motivation factor for all the three categories of respondents, i.e. MOs, ANMs and GNMs. Similarly, under the remuneration heading, good working environment was found to be the most important motivation factor. Under the co-worker heading, supervisors' support was found to be the most important, while under achievement heading, achievement-related promotion was reported to be the most important by all the three categories of health workers included in the study.

Table 3 Mean score and (SD) of 26 motivation factors by type of health service provider

	Factors under job attributions	Mean score for MO	Mean score for ANM	Mean score for GNM	
1	Exercising authority	4.83 (0.46)	4.76 (0.46)	4.92 (0.46)	1
2	Significant and meaningful goal	4.09 (0.31)	4.07 (0.31)	4.14 (0.31)	2
3	Creative opportunity	4.11 (0.51)	4.20 (0.51)	4.19 (0.51)	3
4	Clear duties and responsibility	4.78 (0.37)	4.92 (0.37)	4.81 (0.37)	4
5	Control over job decision related to				5
utilizing money	4.17 (0.57)	4.15 (0.57) 4.27 (0.57)			utilizing money
6	Job security	4.59 (0.57)	4.49 (0.57)	4.62 (0.57)	6
7	Opportunity to use Skills	4.22 (0.62)	4.04 (0.62)	4.24 (0.62)	7
8	Availability of adequate resources	4.93 (0.29)	4.93 (0.29)	4.89 (0.29)	8
9	Physical safety	4.74 (0.40)	4.87 (0.40)	4.89 (0.40)	9
10	Challenging and interesting work	4.43 (0.51)	4.44 (0.51)	4.51 (0.51)	10
11	General decision-making	3.85 (0.79)	4.03 (0.79)	4.05 (0.79)	11
Factors under remuneration					Factors under remuneration
12	Adequate salary and benefits	4.48 (0.61)	4.62 (0.61)	4.86 (0.61)	12
13	Pension	3.78 (0.64)	4.30 (0.64)	4.35 (0.64)	13
14	Good working environment	4.65 (0.49)	4.68 (0.49)	4.89 (0.49)	14
15	Adequate leaves	3.72 (0.62)	3.79 (0.62)	3.89 (0.62)	15
Factors under co-worker					Factors under co-worker
16	Effective team work	4.85 (0.34)	4.83 (0.34)	4.95 (0.34)	16
17	Job-related pride and respect	4.20 (0.46)	4.27 (0.46)	4.16 (0.46)	17
18	Freely expressing opinion	4.13 (0.48)	4.23 (0.48)	4.16 (0.48)	18
19	Appreciation for good work	4.26 (0.61)	4.25 (0.61)	4.19 (0.61)	19
20	Supervisor's support	4.91 (0.31)	4.89 (0.31)	4.95 (0.31)	20
21	Fair treatment by colleagues	3.93 (0.46)	4.14 (0.46)	4.14 (0.46)	21
Factors under achievements					Factors under achievements
22	Job meaningfulness	4.11 (0.47)	4.21 (0.47)	4.24 (0.47)	22
23	Earned respect as a person	4.09 (0.54)	4.14 (0.54)	4.30 (0.54)	23
24	Achievement-related promotion	4.65 (0.52)	4.69 (0.52)	4.62 (0.52)	24
25	Growth and development	4.43 (0.54)	4.23 (0.54)	4.32 (0.54)	25
26	Interpersonal relationship	3.89 (0.60)	4.18 (0.60)	3.78 (0.60)	26

As a next step, factor analysis was carried out. Table 4 describes the factorial analysis of communalities before and after extraction of individual factors. Principal component analysis works on the initial assumption that variance should be common before extraction communities and should be equal to 1. The extraction values reflect the common variance in data structure. However, after extraction, 8 of the total 26 items/subfactors with values less than 0.6 were discarded as values less than 0.6 indicate variables that do not fit well with the factor solution. As explained in the table below, 8 of the total 26 items that were excluded from further analysis as

their values were less than 0.6 were as follows: creative opportunities, opportunity to use skill acquired through professional course, general decision-making, availability of adequate resources, job security, freely expressing opinion, fair treatment by colleagues and lastly challenging and interesting work. (See Table 4 for details.)

Table 4 Distribution of the statements narrating the factors associated with motivation after extraction

	Statements/items	Initial	Extraction	Rotated component matrix
1.	Exercising authority	1.000	.643	Included
2.	Significant and meaningful goal	1.000	.732	Included
3	Creative opportunities	1.000	.593	Excluded
4	Clear duties and responsibilities	1.000	.608	Included
5	Control over job decision related to utilizing money, procurement, HR	1.000	.675	Included
6	Opportunity to use skill acquired through professional course	1.000	.588	Excluded
7	General decision-making (day to day affairs)	1.000	.560	Excluded
8	Availability of adequate resources (money)	1.000	.544	Excluded
9	Adequate salary and benefits	1.000	.686	Included
10	Pension	1.000	.636	Included
11	Good working environment	1.000	.646	Included
12	Adequate leaves	1.000	.709	Included
13	Job security	1.000	.550	Excluded
14	Achievement-related promotion	1.000	.602	Included
15	Freely expressing opinion	1.000	.542	Excluded
16	Effective team work	1.000	.652	Included
17	Job-related pride and respect	1.000	.656	Included
18	Appreciation for good work	1.000	.613	Included
19	Supervisor's support	1.000	.784	Included
20	Fair treatment by colleagues	1.000	.559	Excluded
21	Growth and development	1.000	.678	Included
22	Job meaningfulness	1.000	.666	Included
23	Earned respect as a person	1.000	.641	Included
24	Interpersonal relationship	1.000	.605	Included
25	Physical safety	1.000	.747	Included
26	Challenging and interesting work	1.000	.522	Excluded

For establishing construct validity, we conducted the pattern matrix analysis wherein average loading of each factors (F-1 to F-8) were calculated. Then from average loading, we extracted the variance, i.e. variance extracted, and took the average. Hence, both the average variance and correlation were calculated. These scores were used to calculate the two subtypes of construct validity: convergent validity and discriminant validity [51]. It is well documented that for analyze-dimension reduction factor, if the average variance is greater than the correlation then the discriminate validity and convergent validity are established. In the present study, the average variance was more than the correlation and hence both the discriminate and convergent validities were established.

Next, eigenvalues were calculated with each linear component (items/subfactors) before extraction, after extraction and after rotation. It has identified 18 factors within the dataset. The eigenvalues associated with each factor represents the variance explained by that linear component, and it will also display the percentage of variance explained. But it would display only those variance values whose eigenvalues are more than 1 whereas subsequent factors explain only a small amount of variance. The eigenvalues are represented graphically by the scree plot. See Fig. 1 for details
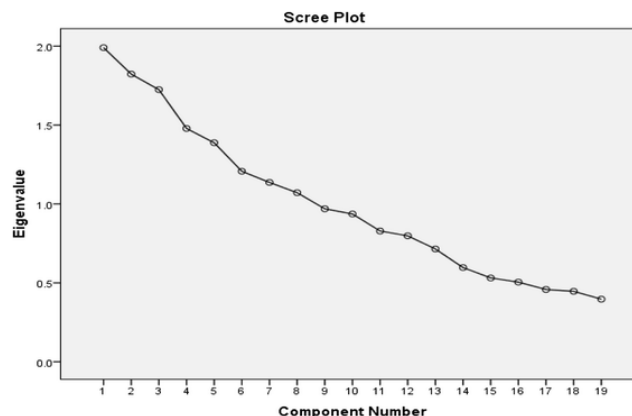
Fig 1

Fig 1

Graphical representation of eigenvalues by scree plot. X axis includes the eigenvalues for the motivation components while the Y axis represents the different components of motivation

For understanding of the relative impact of individual factors after extraction, sub factors/items having a values less than 0.6, indicating that variables do not fit well with the factor solution, were dropped from the final analysis (see Table 4 for items included and excluded based on values less than 0.6) and factor analysis was repeated on the remaining 18 items.

A revised extraction was further done in the components having a large range of variability within the observations. Observations hence obtained after revised rotation were finally factored into the eight main factors that can be plausible determinants for work-related motivation (see Table 5). The items or sub factors having both positive as well as negative correlation were included as explained in Table 6.

Table 5 Rotated component matrix: factors

Factors	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Statements /items	Clear duties and responsibilities (statement 4)		Physical safety (statement 25)	Adequate leaves (statement 12)	Pension (statement 10)	Supervisor's support (statement 19)	Adequate salary and benefits (statement 9)
	Exercising authority (statement 1)	Significant and meaningful goal (statement 2)	Achievement-related promotion (statement 14)	Effective team work (statement 16)	Job meaningfulness (statement 22)	Appreciation for good work (statement 18)	Earned respect as a person (statement 23)
	Job-related pride and respect (statement 17)		Good working environment (statement 11)				
	Interpersonal relationship (statement 24)						

Extraction method: principal component analysis. Rotation method: varimax with Kaiser normalization
Rotation converged in 24 iterations

Table 6 Rotated component matrix: components

Component							
	1	2	3	4	5	6	7
Statement 4	.714	−.183				.132	
Statement 1	.672	.239	.254	.168	−.120		.196
Statement 17	−.453	.372		.261	.126		−.335
Statement 24	.441		−.156	.158	.195	−.200	
Statement 2	−.106	.765			.304		
Statement 25			.658	−.141			
Statement 14			.648	.236		−.171	
Statement 11			.541	−.480			
Statement 12				.748		.223	
Statement 16				−.700		.289	
Statement 10		−.130	.138		.761		.257
Statement 22		.169	−.113		.708	−.108	−.165
Statement 19						.818	
Statement 18	−.187	.176			.104	−.609	
Statement 9	.126		.117	.115	.201	.104	.773
Statement 23	.183		.371		.269	.106	−.652
Statement 21	.294		−.260			−.115	−.145
Statement 5	−.327	−.275	.260			.251	137

Extraction method: principal component analysis. Rotation method: varimax with Kaiser normalization. Rotation converged in 24 iterations. These eight factors were later labelled and decided upon by developing consensus with researcher as narrated below:

Factor 1: transparency
Factor 2: goals
Factor 3: security (both physical and financial)
Factor 4: convenience
Factor 5: benefits
Factor 6: encouragement
Factor 7: adequacy of earnings
Factor 8: growth and power

Table 6 further explain that of the 18 items, 4 have negative correlation with 8 different components identified. The rotated component matrix was applied and is narrated in Tables 5 and 6. These 8 factors are narrated according to their positive correlation as explained below:
• The factor of transparency included statements 4 and 1 which were positively associated. That means clarity in duties, responsibilities and exercising authority motivate the healthcare workers.

- The factor of meaningful goals had a positive value for statement 2 which was a significant and meaningful goal.
- The factor security was made up of statements 25, 14 and 11, but statement 11, i.e. good working environment, had a value less than 0.6 and was dropped. It reflects that that a worker is motivated if he/she is provided with basic physical safety (statement 25) and equally important is an achievement-related promotion (statement 14) that possibly keeps the worker motivated.
- The factor of convenience did not have any of the positive items other than statement 12 reflecting that adequacy of leaves motivates the staff. However, there were three positive items (adequacy of salary, adequate leaves and physical safety) although less than 0.6 narrating that convenience is one plausible component within motivation that has the potential to motivate the workers.
- The factor of perceived benefits was positively correlated with statements 10 and 22 suggesting that pension and job meaningfulness were the most important items that were perceived important by respondents for their motivation.
- The factor encouragement had only one statement with a value more than 0.6, and the study participants opined that supervisor's support (statement 19) is the main item that is related to their motivation.
- The factor earning was associated with adequacy of salary and other benefits (statement 9) and hence suggests that salary and other monetary benefits can encourage and motivate the respondents.
- The factor of growth and power was associated with growth and development (statement 21) and a control over job decisions related to utilizing money procurement and issues related to HR (statement 5).

V. DISCUSSION

The present study was done with an objective to test and develop a reliable and valid instrument for investigating the motivation of health service providers (doctors or MOs and nurses) towards certain job-related aspects and the extent to which these motivate them to perform better at work. Various factors and sub factors were studied and analyzed to understand the same. Although the study included 154 respondents, the results cannot be completely generalized to healthcare providers from India and other countries facing similar issues of poor motivation. Further, the study did not assess the current work conditions under which the health workers work, but the results are only based on what healthcare workers perceive about the motivational factors and how much importance they give to different factors for improving their will to perform better at work.

However, despite the limitations, the instrument developed to measure motivation in the current research would be very useful to health reformers (particularly in Saudi Arabia, researchers, policy actors and state health systems to design human resource management (HRM) strategies based on motivational needs of healthcare providers that can be measured using the reliable and valid tool used in the present study. The study is the first of its kind in Saudi Arabia designed at developing a measurable instrument to measure motivation among Saudi Arabia health service professionals and is based on a solid theoretical framework of motivation [20–23].

As founded on literature review, a suitable tools comprising 19 items was modified from a study [43]. Next, the tools were pilot tested and additional seven items were added to the instrument. Pilot testing was done with 14 MOs and 5 nurses working with government health canters from Yanbu (another Provence), Saudi Arabia, during January 2013.These seven additional items were added based on a pilot test of the instrument with health service providers. The modification of the instrument also involved a consensus-developing process among the two experts working on issues of motivation. A two-stage Delphi technique was used to build up the consensus between the experts and the authors [44]. The subject expert opinions were also important to develop content validity. The seven additional factors added to the adapted instrument were as follows: job security, availability of adequate resources, physical safety, challenging and interesting work, freely expressing opinion, achievement-related promotion and growth and development. Out of these seven factors, four have been identified as important and have been included in tools used elsewhere [12, 14]. In order to check the tool's reliability, the Cronbach alpha test statistic was calculated that suggested the Cronbach alpha test statistic value of 0.81 which is an acceptable value for the tool.

To ensure sampling adequacy, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were also applied. Finally, factor analysis was conducted before and after extraction of common variance to calculate the eigenvalues with cutoff values set as 0.6. Based on principal component analysis and after varimax rotation (that was run on the final study instrument with 26 items) with a cutoff value of 0.6, 4 factors that belonged to the original/adapted instrument that contained 19 were excluded. These four factors were as follows: creative opportunities, opportunity to use skill acquired through professional course, general decision-making and fair treatment by colleagues. Of these, two are intrinsic factors, i.e. creative opportunities and opportunity to use skill acquired through professional course, while the other two are extrinsic factors.

As far as inclusion and exclusion based on factor analysis results of the seven additional items (that were added to the adapted tool containing 18 factors) was concerned, the item-scale criteria of 0.6 cutoff value did not satisfy in the case of the following four out of seven items: availability of adequate resources, job security, freely expressing opinion and challenging and interesting work. While the item-scale criteria of 0.6 cutoff value satisfied for three factors, achievement-related promotion, physical safety and growth and development, indicating the need to include these three items in the final modified version of the tool. Therefore, the final modified tool after running PCA suggested the inclusion of 18 items as follows: exercising authority, significant and meaningful goal, clear duties and responsibilities, control over job decision, adequate salary and benefits, pension, good working environment, adequate leaves, achievement-related promotion, effective teamwork, job-related pride and respect, appreciation for good work, supervisor's support, growth and development, job meaningfulness, earn respect, interpersonal relationship and physical safety.

Of the final 18 items included in the tool, 7 were intrinsic items, namely the following: significant and meaningful goal, achievement related promotion, job-related pride and respect, appreciation for good work, growth and development, job meaningfulness and earn respect, and the remaining 11 were extrinsic factors. According to rotated component matrix, these 18 factors were further labelled under the following 8 main factors: transparency, meaningful goal, security, convenience, perceived benefits, encouragement, earning and growth and power.

While developing consensus to measure motivation among healthcare professionals is subjective, there is an urgent need to develop the tools that can measure the work motivation in Saudi Arabia. Several scales and tools are used in the management studies to ascertain the same, but the present study is the first effort to develop and pilot test the tools in reference to public health system providers in Saudi Arabia. The development of the instrument in the present study adds a great value to the previous tool and study from Cyprus. First of all, the tool was modified so that the items measuring motivation could be made more explicit to avoid any ambiguity. Secondly, the final tool developed for the study suggested that four factors be excluded from the Cyprus study tool which were as follows: creative opportunities, opportunity to use skill acquired through professional course, general decision-making and fair treatment by colleagues. Of these, two are intrinsic factors, i.e. creative opportunities and opportunity to use skill acquired through professional course, while the other two are extrinsic factors. Yet another value addition of the tool developed in the study is that it suggests the need for including achievement-related promotion, physical safety and growth and development indicating a strong need among health service providers towards intrinsic motivation that could potentially have strong policy implications in designing HRH-related strategies in Saudi Arabia that give a strong focus on intrinsic factors of motivation.

It was detected that measuring motivation is a complex phenomenon. But there are certain factors and subfactors that can help in understanding the motivation level of an individual. Observations from the present study indicate that the factors that can measure motivation can be broadly factored into eight domains. Under each domain, there are several sub factors that may motivate an individual. One of the most significant domains that has emerged out of the present tool is physical security that assists in motivating a Saudi Arabia healthcare provider to be with the system or job.

VI. CONCLUSIONS

In conclusion, this study clearly discovered that several motivation factors are important to increase the work motivation of Saudi Arabia healthcare workers. This study restates the fact that intrinsic motivation is an important phenomenon and therefore interventions designed at addressing the motivation must consider intrinsic factors of motivation [10–12, 14]. However, the study findings also indicate that extrinsic factors cannot be ignored as 11 out of 18 items included in the final study tool belonged to extrinsic motivation. Hence, one of the recommendations as supported by research elsewhere is that the state health ministry in Saudi Arabia must address the motivation of health service professionals by designing a platform of strategies (a mix of both hygiene and factors of motivation) to respond to the motivational needs of service providers [14, 1]. Therefore, we strongly recommend that the ministry of health in Saudi Arabia, policymakers and reformers devise management strategies that address both intrinsic and extrinsic factors of motivation. This study can help in providing researchers and health administrators a instrument to measure motivation among healthcare professionals, and the results derived from use of the tool can further be useful is designing HRM strategies to address the shortage and maldistribution and improve work performance of health service professionals in the Kingdom of Saudi Arabia.

This study concludes that motivation factors are important for healthcare workers to improve and perform better at work that include both intrinsic and extrinsic motivation factors. Job attribution factor is the highly rated factor among all, and it is an intrinsic factor. It recommends that for health service providers both extrinsic and intrinsic factors are significant.

Despite these limitations, this study throws light on some of the motivational factors important for improving healthcare workers' performance in the healthcare system particularly in the kingdom of Saudi

Arabia (KSA). There is only little research done on the work motivation of healthcare staff, and this study has the potential to provide the ministry of health in (KSA) and researchers with a tool to assess motivation. However, the authors suggest for a greater need to do research on understanding motivational factors, and in order to do so, there is a need to develop instruments with good psychometric properties that can measure motivation.

REFERENCES

[1]. Dieleman M, Cuong PV, Anh LV, Martineau T. Identifying factors for job motivation of rural health workers in North Vietnam. Hum Resource Health. 2003; 1:10. View Article Pub Med Central
[2]. WHO. Working together for health: The World Health Report 2006. Geneva: WHO; 2006. p. 2006. Available at http://www.who.int/whr/2006/whr06_en.pdf. Accessed Jan 24.
[3]. Gupta N, Zurn P, Diallo K, Poz MR. Uses of population census data for monitoring geographical imbalance in the health workforce: snapshots from three developing countries. Int J Equity Health. 2003; 2:11. View Article Pub Med Central
[4]. Buchan J. What difference does ("good") HRM make? Hum Resource Health. 2004; 2:6. View Article Pub Med Pub Med Central
[5]. Health Systems Development, World Health Organization Country Office for India: Not enough here … too many there: health workforce in India. Geneva: World Health Organization; 2007.
[6]. Government of India, Ministry of Health & Family Welfare, National Rural Health Mission (NRHM). Rural health statistics in India 2010. New Delhi: NHRM; 2010.
[7]. Franco LM, Bennett S, Kanfer R. Health sector reform and public sector health worker motivation: a conceptual framework. Soc Sci Med. 2002;54(8):1255–66. View Article Pub Med
[8]. Central Bureau of Health Intelligence, Dte.GHS, Mo HFW, GOI In collaboration with WHO—India Country Office managing human resource for health Oct-2007.
[9]. Pareek U. Understanding organizational behavior. Oxford: Oxford University Press; 2002.
[10]. Sheikh K, Rajkumari B, Jain K, Rao K, Patanwar P, Gupta G, Antony KR, Sundararaman T. Location and vocation: why some government doctors stay on in rural Chhattisgarh, India. Int Health. 2012;4:192–9.View Article Pub Med
[11]. Purohit B, Verma RK. A study of human resource development climate in government health centers in India. J Health Manage. 2013;15(3):431–43. View Article
[12]. Bhatia S, Purohit B. What motivates government doctors in India to perform better at work? J Health Manag. 2014;16(1):149–59. View Article
[13]. Peters DH, Chakraborty S, Mahapatra P, Steinhardt L. Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states. Hum Resource Health. 2010; 8:27. View Article Pub Med Pub Med Central
[14]. Purohit and Bandyopadhyay: Beyond job security and money: driving factors of motivation for government doctors in India. Hum Resource Health. 2014; 12:12. doi:10.1186/1478-4491-12-12
[15]. Nagy MS. Using a single-item approach to measure facet job satisfaction. J Occup Org Psychol. 2002; 75:77–86. View Article
[16]. Mbindyo PM, Blaauw D, Gilson L, English M. Developing a tool to measure health worker motivation in district hospitals in Kenya. Hum Resource Health. 2009; 7:40. View Article Pub Med Pub Med Central
[17]. Paleologou V, Kontodimopoulos N, Stamouli A, Aletras V, Niakas D. Developing and testing an instrument for identifying performance incentives in the Greek health care sector. BMC Health Serv. 2006; 6:118. doi: 10.1186/1472-6963-6-118.View Article
[18]. Faye et al. Developing a tool to measure satisfaction among health professionals in sub-Saharan Africa. Hum retour Health. 2013; 11:30. View Article Pub Med Pub Med Central
[19]. Morrison et al. Validating a tool to measure auxiliary nurse midwife and nurse motivation in rural Nepal. Hum resource Health. 2015; 13:30. View Article Pub Med Pub Med Central
[20]. Herzberg F, Mausner B, Snyderman BB. The motivation to work. 2nd ed. New York: John Wiley & Sons; 1959.
[21]. Herzberg F. Work and nature of man. Cleveland: World Publishing; 1966.
[22]. Herzberg F. One more time: how do you motivate employees? Harv Bus Rev. 2003; 81:87–96. Originally published in 1968.PubMed
[23]. Maslow AH. A theory of human motivation. Psychol Rev. 1943;50(4):370–96. View Article
[24]. WHO Regional Office for the Western Pacific. The migration of skilled health personnel in the Pacific Region: a summary report. Geneva: World Health Organization; 2004. Available at http://www.wpro.who.int/publications/docs/Migration_Skilled_Health.pdf. Accessed 26 Jan 2014.
[25]. Dieleman M, Toonen J, Touré H, Martineau T. The match between motivation and performance management of health sector workers in Mali. Hum Resour Health. 2006; 4:2. View Article Pub Med Pub Med Central
[26]. Rahman SM, Ali NA, Jennings L, Seraji MH, Mannan I, Shah R, Al-Mahmud AB, Bari S, Hossain D, Das MK, Baqui AH, El Arifeen S, Winch PJ. Factors affecting recruitment and retention of community health workers in a newborn care intervention in Bangladesh. Hum Resour Health. 2010; 8:12. View Article Pub Med Pub Med Central
[27]. Mandie-Filer A, Bolger J, Hauck V. Papua New Guinea's health sector: a review of capacity, change and performance issues, ECDPM Discussion Paper 57F. Maastricht: European Centre for Development Policy Management (ECDPM); 2004. Available at http://www.ecdpm.org/dp57F#sthash.zmQDdlMy.dpuf. (26 January 2014).
[28]. Nguyen BN, Nguyen BL, Nguyen LH. Human resources for health in Vietnam and the mobilization of medical doctors to commune health centers. Mueang Nonthaburi: Asia- Pacific Action Alliance on Human Resources for Health; 2005.
[29]. Lehman U, Dieleman M, Martineau T. Staffing remote rural areas in middle- and low-income countries: a literature review of attraction and retention. BMC Health Serv Res. 2008; 8:19. View Article
[30]. Henderson L, Tulloch J. Incentives for retaining and motivating health workers in Pacific and Asian countries. Hum Resour Health. 2008; 6:18. View Article Pub Med Pub Med Central
[31]. Mpembeni et al. Motivation and satisfaction among community health workers in Morogoro Region, Tanzania: nuanced needs and varied ambitions. Hum Resour Health. 2015; 13:44. View Article Pub Med Pub Med Central
[32]. Hotchkiss DR, Banteyerga H, Tharaney M. Job satisfaction and motivation among public sector health workers: evidence from Ethiopia. Hum Resour Health. 2015; 13:83. View Article Pub Med Pub Med Central
[33]. Luthans F. Organizational behavior. 11th ed. New York: McGraw-Hill; 2007.
[34]. Robbins SP, Judge TA. Organizational behavior. 13th ed. Upper Saddle River: Pearson/Prentice-Hall; 2008.
[35]. Baron RA, Kalsher MJ. Psychology: from science to practice. 2nd ed. Mishawaka, IL, USA: Pearson Education; 2007.

[36]. Hirschfeld RR. Does revising the intrinsic and extrinsic subscales of the Minnesota Satisfaction Questionnaire short form make a difference? Educ Psychol Measure. 2000; 60:255–70. View Article

[37]. Dolbier CL, Webster JA, McCalister KT, Mallon MW, Steinhardt MA. Reliability and validity of a single-item measure of job satisfaction. Am J Health Promote. 2005; 19:194–8.View Article Pub Med

[38]. Garcia-Pena MC, Reyes-Lagunes I, Reyes-Frausto S, Villa-Contreras S, Libreros-Bango V, Munoz Hernandez O. Development and validation of an inventory for measuring job satisfaction among family physicians. Psychol Rep. 1996; 79:291–301.View Article PubMed

[39]. Sauter MA, Boyle D, Wallace D, Andrews JL, Johnson MS, Bates M, Edenfield SM, Carr R, Campbell L, Hamilton BK, Taunton RL. Psychometric evaluation of the Organizational Job Satisfaction Scale. J Nurs Meas. 1997; 5:53–69. Pub Med

[40]. Traynor M, Wade B. The development of a measure of job satisfaction for use in monitoring the morale of community nurses in four trusts. J Adv Nurs. 1993; 18:127–36. View Article Pub Med

[41]. Pareek U. Training instruments in HRD and OD. 2nd ed. New Delhi: Tata McGraw-Hill; 2002.

[42]. Sarupria D et al. Measuring organizational climate. India: Academy of HRD 2.02; 1996. p. 117–21.

[43]. Lambrou et al. Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital. Hum Resour Health. 2010; 8:26. View Article Pub Med Pub Med Central

[44]. Dissertation submitted to IIPHG. Assessing motivation factors among health care providers from public health system in Khargone and Khandwa district of Madhya Pradesh. 2011.

[45]. Pillay R. Work satisfaction of professional nurses in South Africa: a comparative analysis of the public and private sectors. Hum Resour Health. 2009; 7:15. View Article Pub Med Pub Med Central

[46]. Chandler CI, Chonya S, Mtei F, Reyburn H, Whitty CJ. Motivation, money and respect: a mixed-method study of Tanzanian non-physician clinicians. Soc Sci Med. 2009;68(11):2078–88. View Article Pub Med

[47]. Demerouti E, Bakker AB, Vardakou I, Kantas A. The convergent validity of two burnout instruments: a multitrait-multimethod analysis. Eur J Psychol Assess. 2003;19(1):12–23. View Article

[48]. Mittal R. Cross-cultural orientation inventory: development and measure of a new instrument. Int J Contemp Bus Stud. 2012;3(5):32–48.

[49]. IBM SPSS Statistics version 19 [software].

[50]. Kaiser HF. An index of factorial simplicity. Psychometrika. 1974; 39:31–6. View Article

[51]. Khasawneh, A. (2014), "Improving occupational health and workplace safety in Saudi Arabia", International Journal of Development and Sustainability, Vol. 3 No. 2, pp. 261-267

[52]. Khasawneh, A. Alhazemi .A. (2015), "Human resource management and healthcare employee's motivation a comparison study in

[53]. Saudi Arabia public and private hospitals" International Journal of Current Research, Vol. 7, Issue, 03, pp. 13573-13578, March, 2015

[54]. Campbell DT. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychol Bull. 1959; 56:81–105. doi: 10.1037/h0046016.ViewArticle Pub Med