An assessment of the effectiveness of supervision in preventive healthcare institutions under the purview of the Regional Directorate of Health Services, Kalutara

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Abstract

Background: Supervision is an essential element in primary healthcare. It is not only the number that matters but the quality and effectiveness of supervision as well. Ineffective supervision is a cause of poor performance that can lead to sub-optimal health outcomes.

Objective: To assess the effectiveness of supervision in preventive healthcare institutions under the administrative purview of the Regional Directorate of Health Services (RDHS), Kalutara

Method: A descriptive cross-sectional study was designed and carried out in all preventive sector healthcare institutions under the administrative purview of the RDHS, Kalutara. The entire population of the supervisors (Regional Director and Deputy Regional Director of Health Services, Consultant Community Physician, Medical Officer-Maternal & Child Health, Regional Epidemiologist, District Dental Surgeon, Supervisory Public Health Nursing Officers, Supervisory Public Health Inspector, Medical Officers of Health, Additional Medical Officers of Health, Supervisory Public Health Inspectors, Public Health Nursing Sisters, and Supervisory Public Health Midwives) and supervisees (Public Health Inspectors and School Dental Therapists) in the RDHS division except the Public Health Midwives (PHMs) was included in the study as their actual numbers are low. The selection of PHMs, the major category of supervisees, was subjected to random sampling. Self-administered questionnaires, focus group discussions, and observatory visits were used to collect the data. Data were analyzed both quantitatively and qualitatively. The effectiveness of supervision was assessed utilizing Manchester Clinical Supervision Scale (MCSS-26). Knowledge, attitudes, and practices of supervisors were assessed through a self-administered questionnaire and to some extent through observations.

Results: The overall response rate was 67.8%. The knowledge related to supportive supervision among the supervisors was moderate. The level of knowledge was not significantly different among the different categories of supervisors. The level of attitudes towards supervision was also moderate. However, it was significantly different among the supervisory categories. As per the scale devised through the questionnaire, the supervisory practice was moderate as well, but it was not significantly different among the different categories of supervisors. The mean score of MCSS-26 was 65.67 indicating that overall supervision was ineffective by its threshold limit of 73. Apart from the administrative function of supervision, the supportive and educational functions were largely ineffective.

Conclusion and recommendations: The effectiveness of supervision was suboptimal in preventive care health institutions of the RDHS division Kalutara. Appropriate measures that focused on enhancing supportive and educational functions of supervision are therefore required to improve the effectiveness of supervision among different categories of supervisors in the division. Designing and implementing more focused training and development activities to improve knowledge, attitude, and practices in supportive supervision; facilitating, encouraging, and empowering the supervisors to implement their post-supervisory recommendations; and utilizing the MCSS-26 as a tool of measuring supervisory effectiveness for the purpose of monitoring and evaluating the supervisory activities, are therefore recommended to improve the effectiveness of supervision in the division.

Keywords: Supervision, Effectiveness, Preventive Healthcare, MCSS-26

Background

Supervision is a continuous process that guides, trains, and encourages workers to improve their skills and performance, so they can reach the expected quality and standards in healthcare delivery [1]. There are three basic functions of supervision; the administrative function that organizes the supervisees and their work to achieve the organizational objectives, the educational function that improves the knowledge and skills of the supervisees, and the supportive function that reduces job-related stresses and fosters the self-awareness of the workers to cope with their work [2].

In its simplest terms, supervision is overseeing the subordinates by competent and authorized personnel. In contrast to traditional practices that are characterized by authoritarian type of attitudes and behavior, the contemporary practices of supervision are characterized by shared performance, goal setting, mentoring, and open communication [3]. While traditional practices are often criticized for their failures in sustaining employee motivation and satisfaction, contemporary practices are praised for their ability to improve them. Nevertheless, contemporary practices are preferred by workers as they are more responsive to realities [4].

The term 'effectiveness' refers to the extent to which a specified intervention, procedure, or service

does what it intends to do for a specified population [5]. Effective supervision is expected to provide not only a conducive environment for workers to reflect on their practices but also to develop the required skills and knowledge [6] for better performance. Thus, the effectiveness of supervision refers to the extent to which supervision can achieve those attributes under given circumstances. Factors that affect the effectiveness of supervision are diverse and multitude. A good understanding of the local contexts, supervisorconstructive supervisee relationship, feedback. scheduled supervisions, knowledge and skills of the supervisors, nature of assessment, approach to counseling, and career guidance to supervisees are among them [7]. According to Mor-Barak et al., task assistance, social and emotional support, and interpersonal interactions are significantly associated with beneficial outcomes for the supervisees. However, the same factors can be detrimental if they are not effectively met [8].

Supervision improves the quality of healthcare by enhancing skills and performance. It is an intervention that helps to sustain optimum healthcare delivery by enabling and empowering the workers. However, Avortri et al., argued that supervisions in low-income countries are suboptimal, unsupportive, and demotivating [9]. Bosch-Capblanch et al., observed that compared to no supervision, supervision has relatively a minor or no impact on health workers' knowledge or practice implying that supervision in primary healthcare (PHC) is presumably not as effective as one would expect [10]. Therefore, intervening to improve the effectiveness of supervision in PHC is needed. However, understanding what constitutes effectiveness is important before intervening [11].

The establishment of 'Health units' to provide preventive healthcare for the Sri Lankan community started way back in 1926. The first unit was established in Kalutara [12]. Since then, the preventive healthcare system in a district evolved to the present organization as illustrated in Figure 1.

The health unit in contemporary settings is known as the Medical Officer of Health (MOH) division. It covers a well-defined geographic area that coincides with the politico-administrative division of the country at the level of the Divisional Secretariat. The office, which is headed by a Medical Officer (MO), serves an approximate population of 60,000-100,000 with a core team comprising Public Health Midwives (PHM) and Public Health Inspectors (PHI) accompanied by Public Health Nursing Sisters (PHNS) and Supervisory Public Health Inspectors (SPHI) as supervisors. There are 353 MOH offices across 25 districts on the Island [13]. There are thirteen MOH offices under the purview of the Regional Directorate of Health Services in the Kalutara district. The approximate population assigned to each office varies from 37,000 to 137,000 people depending on the population density of the area [14]. The cadre distribution of the preventive sector in the district is illustrated in Table 1.

Supervision in the preventive health sector is hierarchical. The district supervisors are supposed to supervise the divisional supervisors, who in turn are supposed to supervise the field officers under them. All the preventive sector health institutions of a district generally come under the administrative and technical purview of an RDHS office at the district level.

Supervision is an essential element in primary healthcare. It is not only the number that matters but the quality and effectiveness of supervision as well. Ineffective supervision is a cause of poor performance [11] that can lead to sub-optimal health outcomes. The supervisors are more focused on technical matters of supervision than non-technical elements that help to improve its effectiveness [15]. Thus, the ineffectiveness of supervision has always been a concern in primary healthcare (PHC). Ineffectiveness and poor quality of supervision significantly affect the optimal outcomes of family health services [15]. However, the effectiveness of supervision in the Kalutara RDHS has not been assessed in previous studies.

Objective

The objective of this study was to assess the effectiveness of supervision in preventive healthcare institutions under the administrative purview of the RDHS office, Kalutara.

Methodology

A descriptive cross-sectional study was designed and carried out in the Kalutara district covering all preventive sector healthcare institutions that come under the administrative purview of the RDHS Office. The ethical clearance of the study was obtained from the Ethics Review Committee of the Postgraduate Institute of Medicine, Colombo and the administrative approval was obtained from the respective provincial and regional health authorities.

The entire population of the selected categories in the division that get involved in the process of supervision (i.e., both supervisors and supervisees other than the PHMs), was included in the study. The selection of PHMs was subjected to random sampling because their population is large compared to all other categories. The sample size was calculated for the finite population of PHMs at a 95% confidence level with a 5% margin of error. The entire population of PHMs was framed and then subjected to random selection. Therefore, the estimated sample comprised 9 regional level supervisors (i.e., RDHS, DRDHS, CCP, MO-MCH, RE, DDS, SPHNO, SPHID), 64 divisional level supervisors (i.e., MOHs, AMOHs, SPHNSs, SPHMs, and SPHIs), and 265 supervisees (i.e., PHMs, PHIs, SDTs). Two sets of self-administered questionnaires (one for the supervisors and one for the supervisees), three structured focus group discussions (FGDs) aiming to gain insight into the factors that can affect the effectiveness of supervision from the viewpoint of administrators (i.e., RDHS and DRDHS), supervisors (i.e., CCP, MO-MCH, RE, DDS, SPHNO, SPHID, MOHs, AMOHs, PHNSs, SPHMs, and SPHIs), and supervisees (i.e., PHMs, PHIs, and SDTs), and several observatory visits were used to gather the required data. Administrators and regional supervisors were selected entirely while divisional supervisors and supervisees were selected randomly. Data were analyzed both quantitatively and qualitatively. The effectiveness of supervision was assessed by utilizing the modified Manchester Clinical Supervision Scale (MCSS-26) [16]. The MCSS-26 is a scale with 26 items in which 9, 10, and 7 items can be devoted to measuring the attributes related to administrative, supportive, educational functions of supervision and respectively. The total score of the scale is 104 and a score of more than 73 (approximately 70%) is considered as the threshold for effectiveness. The effectiveness assessment of each function was done against the best expected. The expected best in each in category was 36, 40, and 28 respectively. Being on par with the cutoff point of the overall scale, the same percentage (70%) was considered as the cutoff point of effectiveness in each supervisory function as well.

Manchester Clinical Supervision Scale (MCSS) is designed to measure the supervisees' perceptions of supervisory effectiveness [17]. Originally developed by Winstanley, J. [18], it is now believed to be the longest-established, internationally validated research questionnaire

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to measure the effectiveness of supervision in healthcare [16].

The knowledge, attitude, and practice of the supervisors were assessed using a scale developed to measure each attribute. The knowledge assessment was done by using 15 true/false statements while a 5-response Likert scale of 12 and 20 items respectively was used to assess the attitude and practice. The threshold values are indicated in the respective tables of data presentation. Since the scale was developed by the author, it was validated by expert opinion and pilot testing.

Results

The response rate for the supervisors' questionnaire was 70.3% (n=45, N=64) whilst it was 67.1% (n=178, N=265) for the supervisees' questionnaire. The overall response rate of the questionnaires was therefore 67.8% (n=223, N=329). The response rate of the FGDs was 100%.

Quantitative findings

The SPHIs had the lowest average score of knowledge 10.8 (SD:1.64) in supportive supervision while the AMOHs had the highest average score of 12.57 (SD:1.01). The level of knowledge among the supervisors, in general, was moderate with an average score of 12.18 with an SD of 1.43 (Table 2). There was no significant association between statistically the level of knowledge and the category of the supervisor (p=0.39) (Table 3). The level of attitudes was moderate among the supervisors having an average score of 30.33 with an SD of 3.45 (Table 4). The MOHs had the highest average score (x=31.33, SD=3.28) while SPHIs had the lowest (\bar{x} =27.80, SD=7.69). There was a statistically significant association between the level of attitudes and the category of the supervisor (p=0.001), the senior-level supervisors tend to have better attitudes than the junior-level supervisors (Table 5).

The practice of supervision among the supervisors was moderate with an average of 57.91 having an SD of 5.69 (Table 6). The MOHs had the lowest average (\bar{x} =54.78, SD=6.38) while SPHMs had the highest (\bar{x} =61.80, SD=4.92). There was no statistically significant association between the level of practice and the category of supervisor (p=0.536) (Table 7).

The effectiveness of supervision and its functions (administrative, supportive, and educational) were assessed using MCSS-26 (Table 8). The threshold value of effectiveness of supervision was considered 73 based on the postulations made by its authors [16]. The Cronbach's alpha of the MCSS-26 scale was 0.821 in this assessment indicating a higher scale reliability.

The mean score of MCSS-26 in the study sample was 65.67 (SD=8.49) and it indicated that supervision was by and large ineffective by the threshold limit of 73. Although the mean score of the administrative function was almost 79% (\bar{x} =28.41) of the best expected (\bar{x} =36), the mean score of the other two functions, supportive and educational, were 55.5% (\bar{x} =22.2) and 55.1% (\bar{x} =15.43) respectively. It implied that apart from the administrative function, the supportive and educational functions of supervision were ineffective.

The correlations between the MCSS score and the level of perceived competency (r=0.866), motivation (r=0.778), and satisfaction (r=0.807) among the supervisees were strongly positive and significant (Table 9). It was also found that the correlations between the outcomes of supervision were strongly positive and significant (r>0.722) implying that the effective supervision was positively associated with the levels of competency, motivation, and satisfaction of the supervisees.

Although the correlations between the administrative functions of supervision and

its outcomes were positive, the associations were weak and mostly statistically insignificant $(r_1=0.214, p_1=0.004; r_2=0.123, p_2=0.102;$ $r_3 = 0.115$, $p_3 = 0.126$). Contrarily, the associations between the other two functions, namely, supportive and education, and the outcomes of supervision were strongly positive and statistically significant ($r_4 = 0.750$, $p_4 < 0.001$; $r_5 = 0.732$, $p_5 < 0.001$; $r_6 = 0.750$, $p_6 < 0.001$; $r_7 = 0.683$, $p_7 < 0.001$; $r_8 = 0.613$, $p_8 < 0.001$; $r_0 = 0.664$, $p_0 < 0.001$). These findings implied that in contrast to the administrative function of supervision, the supportive and educational functions of supervision were significantly associated with positive outcomes of supervision (Table 10).

Qualitative Findings

In the focus group discussions, all the participants in all three groups, namely, administrators, supervisors, and supervisees, agreed that supervision should be an integral part of primary healthcare. Additional responsibilities vested upon the supervisors often tend to compromise the supervisory activities. Therefore, supervisors frequently adjust their supervisory schedules to those additional responsibilities. Although the supervisors prefer to have uninformed visits, such practices often put supervisees in agony as they have no time to get prepared for supervision. The selective supervision which was frequently adopted by some of the supervisors also worried the supervisees as much as they do in uninformed supervisory visits. Because uninformed visits are often perceived by the supervisees as a strategy of the supervisors who try to find some fault with them.

It was stressed that stereotype supervision provides no room for innovation. Conventional supervisory checklists are time-consuming and less productive. Worsening the facts, the vacant posts of supervisors, particularly the SPHMs, compromised the hierarchical supervision. It has led the PHMs to perceive that they were insufficiently and/or negatively assessed during the supervisory sessions.

Insufficient peer support and lack of coordination among the supervisors often instigate repetitions and overlapping of supervisions. It was emphasized that regional supervisors were not keen on post-supervisory recommendations and suggestions made by the divisional supervisors.

Further emphasis was placed on the fact that some divisional supervisors had not gone through refresher training despite the regional office's best efforts to make sure that everyone does. This has occurred because it is not practical to call each divisional supervisor for training at once.

Amidst all the challenges, the 'Team supervision' which was adopted by the regional officers as a measure to overcome the resource constraint, was praised by the supervisees.

During the field visits, it was observed that the general approach to supervision was not satisfactory on many occasions. The supervisorsupervisee relationship was more formal and technical in most of the supervisory sessions. The supervisors rarely exhibited satisfactory leadership qualities during their supervision. This evaluation was based on an observation checklist that highlighted the supervisor's overall approach to supervision, their relationship with the supervisees while supervising them, the leadership skills of the supervisors, their emotional intelligence, and the managerial duties carried out by them. They were not emotionally intelligent enough to understand the true needs of the supervisees. Supervisors tend to pay more attention to technical aspects of supervision than the managerial functions that are required to energize and motivate the subordinates to run the extra mile go above and beyond.

Discussion

It is worthwhile to note that the higher scale reliability of the MCSS-26 provided some statistical evidence to justify its applicability to local settings. Although it has not been widely utilized in local settings before, it has been recommended for a variety of health settings including fieldwork.

The MCSS-26 score failed to reach the threshold limit of 73 as postulated by Winstanley and White [19]. It indicated that the supervisions were largely ineffective at the divisional level. Except for the administrative function of supervision, the other two functions (supportive educational) were mostly ineffective. and Convincing evidence emerged from the FGDs to assume that supervisors were more focused on technical matters of supervision than nontechnical elements that improve effectiveness. This finding was consistent with the observations made by Kaushalya and Mapitigama [15]. As they suggested, by and large, the supervisions in the preventive sector are authoritative, mechanical. and non-responsive. Moreover, Samaraweera et al., [20] who studied the quality of interactions between the PHNSs and the PHMs during supervision reported similar and consistent findings.

Just like it was hypothesized, this study found that the effectiveness of supervision was positively associated with the outcomes of supervision. Nevertheless, the supervisory functions were also positively associated with the competency, motivation, and satisfaction of the supervisees.

Although the average level of knowledge among the supervisors was categorized as moderate based on the set limits, the other supervisory categories scored relatively higher average scores in the knowledge compared to SPHIs. However, there was no statistically significant association between the level of knowledge and the category of service (p=0.484) to conclude that one category of supervisors was more adequately knowledgeable than another to do the supervision.

The attitude score of the supervisors was 30.33 (out of 48) with an SD of 3.45. The practice score was 57.91 (out of 80) with an SD of 5.69. Therefore, those attributes need improvements. The attitudes of the supervisors were significantly different (p=0.001) from one category to another. However, such a difference was not observable in their practices (p=0.589). Therefore, a more focused approach is required to improve the attitudes and practices of the institutional supervisors.

Conclusion and recommendations

Supervision is a process that should deal with the needs, competencies, expectations, and philosophies of both supervisors and supervisees. The goal of supervision, therefore, should be the

professional growth as well as the development of individual workers which will result in optimized care in the end. Therefore, the effectiveness of supervision is an essential requisite for improving primary healthcare. This assessment found that the effectiveness of supervision was suboptimal in RDHS division Kalutara and, therefore, needs improvements. Designing and implementing more focused training and development activities on improving knowledge, attitude, and practices in supportive supervision among the supervisors; facilitating, encouraging, and empowering the supervisors to implement their post-supervisory recommendations; and utilizing the MCSS-26 as a tool for measuring supervisory effectiveness of the supervisors, are therefore recommended to improve the effectiveness of supervision in the division.

Author declaration

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References

- [1] Garrison K, Caiola N, Sullivan R, Lynam P. Supervising Healthcare Services: Improving the Performance of People [Internet]. 2004 [cited 2020 Apr 19] p. 1–10. Available from: https://www.malecircumcision.org/sites/default/ files/document_library/GD12..Supervising%20 Health%20Services%20Improving%20 the%20Performance%20of%20People.pdf
- Kadushin A, Harkness D. Supervision in Social Work [Internet]. 2002 [cited 2020 Apr 19]
 p. 19–20. Available from: https://ahmadrofai. files.wordpress.com/2017/08/alfred-kadushin-

daniel-harkness-supervision-in-socialwork-2002.pdf

- [3] Marquez L, Kean L. M A Q Making Supervision Supportive and Sustainable: New Approaches to Old Problems Making Supervision Supportive and Sustainable: New Approaches to Old Problems M A Q [Internet]. 2002 [cited 2020 Apr 19]. Available from: https://www. usaidassist.org/sites/default/files/maqno4final. pdf
- [4] Vallières F, Hyland P, McAuliffe E, Mahmud I, Tulloch O, Walker P, et al. A new tool to measure approaches to supervision from the perspective

of community health workers: a prospective, longitudinal, validation study in seven countries. BMC Health Services Research. 2018 Oct 22;18(1).

- [5] Wojtczak A. Glossary of medical education terms: Part 2. Medical Teacher. 2002 Jan;24(3):338– 40.
- [6] Kettle M. Achieving effective supervision
 [Internet]. Iriss. 2015 [cited 2020 Apr 19]. Available from: https://www.iriss.org. uk/resources/insights/achieving-effectivesupervision
- [7] Kilminster S, Cottrell D, Grant J, Jolly B. AMEE Guide No. 27: Effective educational and clinical supervision. Medical Teacher. 2007 Jan;29(1):2–19.
- [8] Mor Barak Michàlle E, Travis Dnika J, Pyun H, Xie B. The Impact of Supervision on Worker Outcomes: A Meta[]analysis. Social Service Review. 2009 Mar;83(1):3–32.
- [9] Avortri GS, Nabukalu JB, Nabyonga-Orem J. Supportive supervision to improve service delivery in low-income countries: is there a conceptual problem or a strategy problem? BMJ Global Health. 2019 Oct;4(Suppl 9):e001151.
- [10] Bosch-Capblanch X, Liaqat S, Garner P. Managerial supervision to improve primary health care in low- and middle-income countries. Cochrane Database of Systematic Reviews. 2011 Sep 7;(9).
- [11] Ladany N, Mori Y, Mehr KE. Effective and Ineffective Supervision. The Counselling Psychologist. 2012 May 23;41(1):28–47.
- [12] Hewa S. Sri Lanka's Health Unit Program: A Model of "Selective" Primary Health Care. Hygiea Internationalis An Interdisciplinary Journal for the History of Public Health [Internet]. 2011

Dec 19 [cited 2020 May 25];10(2):7–33. Available from: https://www.ep.liu.se/ej/hygiea/ v10/i2/a02/hygiea11v10i2a02.pdf

- [13] Ministry of Health and Indigenous Medical Services. Annual Health Statistics 2018 Sri Lanka [Internet]. 2018 [cited 2020 May 25].
 Available from: http://www.health.gov.lk/moh_ final/english/public/elfinder/files/publications/ AHB/2020/AHS%202018.pdf
- [14] Regional Directorate of Health Services, Kalutara.Annual Health Bulletin 2018. Kalutara: Regional Directorate of Health Services; 2019.
- [15] Kaushalya K, Mapitigama N. Effectiveness of supervision in the preventive health sector. 2019.
- [16] Winstanley J, White E. The MCSS-26©: Revision of the Manchester Clinical Supervision Scale© Using the Rasch Measurement Model. Journal of Nursing Measurement. 2011;19(3):160–78.
- [17] Buus N, Gonge H. Translation of the Manchester Clinical Supervision Scale (MCSS) into Danish and a preliminary psychometric validation. International Journal of Mental Health Nursing. 2012 Jul 5;22(2):145–53.
- [18] Winstanley J. Manchester clinical supervision scale. Nursing Standard. 2000 Jan 26;14(19):31–2.
- [19] Winstanley J, White E. The Manchester Clinical Supervision Scale©. The Wiley International Handbook of Clinical Supervision. 2014 May 16;386–401.
- [20] Samaraweera N, Abeysena H, Liyanage T, Taft A. The quality of interaction between Public Health Nursing Sister and Public Health Midwife during supervision in Maternal and Child Health Care settings in Sri Lanka. Journal of the Postgraduate Institute of Medicine. 2014 Nov 13;1(0):6.

Table 1: Public health workforce of the Regional Directorate of Health Services division, Kalutara

District Officers/Supervisors	Number	Institutional Officers	Number
Regional Director	01	Supervisors	
	01		
Deputy Regional Director	01	Medical Officer of Health	13
Consultant Community Physician	01	Additional Medical Officer of Health	19
Regional Epidemiologist	01	Public Health Nursing Sister	16
Medical Officer of Maternal & Child Health	01	Supervising Public Health Midwife	07
District Dental Surgeon	02	Supervising Public Health Inspector	09
Supervising Public Health Nursing Officer	01	Supervisees	
District Supervising Public Health Inspector	01	Public Health Midwife	290
		Public Health Inspector	72
		School Dental Therapist	16
Total	09		442

Table 2: The knowledge related to supportive supervision of the supervisors

Category of			Knowledge score				
Supervisor	Mean	SD	95% CI	Score range		Possible range	
				Min	Max	Min	Max
МОН	12.56	1.74	11.42 – 13.69	10	15		
АМОН	12.57	1.01	12.04 – 13.09	11	15		
PHNS	12.00	1.53	11.13 – 12.86	10	14		
SPHM	12.20	0.84	11.46 – 12.93	11	13	0	15
SPHI	10.80	1.64	9.36 – 12.23	08	12		
All	12.18	1.43	11.76 – 12.59	08	15		

Table 3: The association between the level of knowledge and the category of service

Category of Supervisor	Lev	vel of knowled	Total	Test			
	Low ¹	Moderate ²	High ³		Statistics		
МОН	1	4	4	9			
АМОН	0	6	8	14	Fishers's		
PHNS	2	5	5	12	exact test		
SPHM	0	3	2	5	7.924		
SPHI	1	4	0	5	p = 0.39		
Total	4	22	19	45			
¹ Low (0-10), ² Moderate (11-13), ³ High (14-15)							

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Category of	Attitude score							
Supervisor	Mean	SD	95% CI	Score range		Possibl	e score	
				Min	Мах	Min	Max	
МОН	31.33	3.28	29.18 – 33.47	27	36			
АМОН	30.50	1.78	29.56 - 31.43	27	33			
PHNS	30.42	3.20	28.61 – 32.23	25	35	12	60	
SPHM	30.40	1.14	29.40 - 31.39	29	32			
SPHI	27.80	7.69	21.06 - 34.54	20	40			
All	30.33	3.45	29.32 - 31.33	20	40			

Table 4: Attitudes related to supportive supervision of the supervisors

Table 5: The association between the level of attitudes and the category of service

Category of Supervisor	Le	evel of attitude	Total	Test		
	Low ¹	Moderate ²	High ³		Statistics	
МОН	0	9	0	9		
АМОН	0	14	0	14	Ficharc's	
PHNS	0	12	0	12	exact test	
SPHM	0	5	0	5	14.302	
SPHI	2	2	1	5	p = 0.001	
Total	2	42	1	45		
¹ Low (0-24), ² Moderate (25-36), ³ High (37-48)						

Table 6: The practice of supportive supervision among the supervisors

Category of	Practice score						
Supervisor	Mean	SD	SD 95% CI S		Score range		e range
				Min	Max	Min	Max
МОН	54.78	6.38	50.61 – 58.94	46	64		
АМОН	57.43	5.64	54.47 - 60.38	48	67		
PHNS	59.08	4.94	56.28 - 61.87	52	66	20	100
SPHM	61.80	4.92	57.48 – 66.11	54	66		
SPHI	58.20	5.80	53.11 - 63.28	50	64		
All	57.91	5.69	56.24 – 59.57	46	67		

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Table 7: The association between the level of supervisory practice and the category of ser
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Category of Supervisor	Level of	f supervisory p	Total	Test		
					Statistics	
	Low ¹	Moderate ²	High ³			
МОН	2	7	0	9		
АМОН	1	12	1	14	Fichore's	
PHNS	0	11	1	12	exact test	
SPHM	0	4	1	5	6.409 p = 0.536	
SPHI	1	4	0	5		
Total	4	38	3	45		
¹ Low (0-50), ² Moderate (51-65), ³ High (66-80)						

Table 8: Scores of MCSS-26 by the function of supervision and the category of supervisee

Function of	Range of	Mean	SD	Range	95%	6 CI
supervision/Category	the scale				Lower	Upper
of supervisee					bound	bound
MCSS-26 (Total)		65.67	8.49	34–89	64.42	66.93
- PHM		64.97	8.97	34-89	63.40	66.54
- PHI	0-104	67.82	6.27	55-83	65.94	69.71
- SDT		64.40	11.5	52-76	50.12	78.68
Administrative		28.41	4.30	16-34	27.40	28.68
- PHM		28.41	4.30	16-34	27.66	29.17
- PHI	0-36	26.73	4.32	19-34	25.43	28.03
- SDT		30.20	1.79	28-33	27.98	32.42
Supportive		22.20	5.29	10-38	21.42	22.99
- PHM		21.67	5.32	10-38	20.74	22.60
- PHI	0-40	23.93	4.77	14-35	22.50	25.37
- SDT		20.20	6.68	13-27	11.90	28.50
Educational		15.43	3.59	07-27	14.90	15.96
- PHM		14.88	3.58	07-27	14.26	15.51
- PHI	0-28	17.16	2.93	11-23	16.28	18.04
- SDT		14.00	5.00	09-19	07.79	20.21

Table 9: Statistical association between the MCSS-26 score and the three outcomes of supervision

		Outcomes of supervision					
		Competency	Motivation	Satisfaction			
MCSS-26 score	Pearson r	0.866*	0.778*	0.807*			
	Significance	0.000	0.000	0.000			
n=178							
*Correlation was significant at 0.01 level (2-tailed)							

Table 10: Correlation between the function and the outcomes of supervision

Function of	supervision	Outcome of supervision					
		Competency	Motivation	Satisfaction			
Administrative	Pearson r	0.214* (r ₁)	0.123* (r ₂)	0.115* (r ₃)			
	Significance	0.004 (p ₁)	0.102 (p ₂)	0.126 (p ₃)			
Supportive	Pearson r	0.750* (r ₄)	0.732* (r ₅)	0.750* (r ₆)			
	Significance	0.000 (p ₄)	0.000 (p ₅)	0.000 (p ₆)			
Educational	Pearson r	0.683* (r ₇)	0.613* (r ₈)	0.664* (r ₉)			
	Significance	0.000 (p ₇)	0.000 (p ₈)	0.000 (p ₉)			
n=178							
*Correlation was significant at 0.01 level (2-tailed)							



Figure 1: Organization of the district preventive healthcare system