

# “PHC Leadership: Are Health Centres in Good Hands? Perspectives from 3 districts in Malawi.”

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## Abstract

### Aim

The study aimed to document the kinds of leadership styles are practiced at health centres (H/C) and how these styles can be explained by the contexts, characteristics of the health centre in charge (IC) and subordinate trained health staff (STHS).

### Methods

A well-researched leadership style model was applied, which included task, relation and change styles. This is a cross-sectional study using self-administered questionnaires in 47 H/C in 3 districts. 347 STHSs (95%) and 46 ICs (98%) responded. Questions explored background data and perceived leadership behaviour. Style items were factor analysed, and bivariate analyses and hierarchical regressions determined how styles could be explained.

### Results

Two leadership styles were revealed: “Trans” style contained all relation and the majority of task and change items; “Control” style focused on health statistics (Health Management Information System), reporting and evaluation. STHS and IC had a median age/median work experience of 34/5 years and 38,5/2 years, respectively. 48% of IC reported having no management training. CHAM H/Cs had the lowest score on “Control” style. Distance to referral hospital had no impact on style scores. No contexts or STHS characteristics predicted any leadership styles. For ICs, young age and increasing work experience were significant predictors for both styles, while Nurse ICs were negative predictors for “Control style”. Management training was not a significant predictor for any style.

### Conclusion

Frontline PHC leadership may be forced by situation and context to use a comprehensive style which could lack the diversity and flexibility needed for effective leadership. The missing associations between staff characteristics and leadership styles might indicate that this group is not sufficiently considered and included in leadership processes in the PHC organization. Leadership competency for the ICs seems not to be based on formal training, but substituted by young age and work experience. Health centre organization could also influence the options for leadership behaviour. In conclusion this calls for a reassessment of H/C leadership and formal leadership training.

### Background

The health centre (H/C) plays a major role in implementing primary health care in Malawi and, according to the current Ministry of Health (MOH) management structure, the Medical Assistant (MA) is the head of both the facility and the services provided to the community. The professions trained in clinical medicine - medical doctors (MD), clinical officers (CO), and medical assistants (MA), exclusive of nurses- should fill these management positions, as they are part of the “clinical line”. Nurses are in charge when medical assistants are not in place. This study refers to clinicians in PHC as health workers that relate to patients, make diagnoses and prescribe treatment. In this respect,

this includes at least nurses in charge as clinicians, as they do not have a MA or a CO in the centre and must provide clinical services themselves to the community. This lead position represents a comprehensive set of leadership and managerial responsibilities towards the H/C team to provide clinical care, mother and child care, and public health and community based services. Resource constraints and geographical conditions make this frontline position even more challenging.

The rural setting represents both demanding and rewarding conditions; often there are long distances to the referral and administrative centre, but close relationships develop both professionally and privately with the local community<sup>1,2,3</sup>. The District Health Management Team (DHMT) supervises all health care at health centre and community level.

This study covers both leadership and management behaviour, and, in line with current literature and published research, it uses the term leadership styles when dealing with styles. The curriculum for “Certificate in Clinical Medicine” for medical assistants includes a 45-hour course in community health which equips students with knowledge, skills and attitudes for efficiently and effectively running health centres. The curriculum for nurses and clinical officers offers a similar course. While the need for tailored training and refresher courses has been identified and addressed for medical doctors through pre-service and in-service training, the same has not been availed to heads of health centres.

The importance of leadership/management is acknowledged in various policy documents. For example, The Malawi Essential Health Package (EHP)<sup>5</sup> and the Joint Programme of Work for the Health Sector Wide Approach (SWAp) (2004 – 2010)<sup>6</sup> underlined the community and health centre level as an essential part of the proposed service delivery structure (MOHP, 2002 and 2004)<sup>4,7</sup>. In a number of publications, WHO has strongly advocated the need for the improvement of leadership and management skills at primary care level<sup>8-11</sup>.

The applicability of western theories, concepts of leadership/management and organizations to an African setting must be addressed. The Malawian scholar and researcher, L. B. Dzimbiri, has investigated this issue and underlines that African organizations are structured according to western organisational theory and, in many ways, are managed accordingly, but also take into account the local African cultural environment<sup>12</sup>. His overall conclusion is that we need “contingency managers” who blend all aspects of an effective organization, including management and leadership, in an African environment.

This allows the theoretical assumption that leadership styles in primary health care in Malawi are identical to the relational style and task style first identified by the Ohio State Leadership Studies, and the later change style identified by Ekvall and Arvonen<sup>13,14</sup>. The background for this assumption is that the tasks which leaders in primary health care have to take care of in principle are similar to those which are being attended to by leaders in organizations in general, such as goal setting, distribution of tasks, coordination, motivation, and social maintenance, along with change processes to keep the organization in line with changing working conditions.

A relational focus refers to the leader's propensity to emphasize employees' general welfare, job satisfaction, work support, and participation in decision-making. A task focus implies that the leader is more focused on goals and daily managerial issues, such as coordination and control, while a change focus indicates that the leader is occupied with dynamic adaptation and development issues. In later studies by Bass, Avolio and Bass and Yukl, this has been operationalized in terms of transactional leadership and transformational leadership, where the former reflects a task orientation and the later both a relational and change focus<sup>15-17</sup>. The greater part of leadership research today rests on a contingency approach, which implies that no leadership style is regarded as being superior to others in all circumstances.

Eventually, leadership efficiency is dependent on the existence of the right couplings between the actual situations and qualifications among the employees and leadership styles<sup>18-20</sup>.

Finally, recent research on leadership and management in professional organizations such as health care, has pointed to attribution as an explanation of leadership styles. This means that these styles are not the results of leaders' qualifications of their own choice, but rather should be viewed as an attribution made by followers who observe certain behaviours within the organizational context<sup>21,22</sup>. A consequence of this is that leadership styles should be identified through asking employees how they perceive the leadership, rather than asking the leaders themselves which styles they think they have. Research has revealed that the more professional and experienced employees are, the less attention they pay to leadership styles<sup>17</sup>. To achieve the goals through the strategies set out in the EHP and MGADS, it is imperative that systematic information about primary care leadership and management be collected to improve the planning and delivery of care. With a paucity of studies focusing on health centres in this respect, this study aims to find which of the three leadership styles are present in primary health care, and how they are associated and determined by the characteristics and qualifications of staff and the in charge, and contextual conditions.

**Material and Method**

**Sample**

A cross-sectional questionnaire survey was carried out at 47 primary care health centres in Southern Malawi. The districts and health centres were purposely selected to cover rural/urban communities, government/CHAM centres, large/small districts, large /small health centres and long/short distances to referral hospital. All centres were surveyed in two rural districts, Mangochi and Chiradzulu, 31 and 10 centres respectively, and 6 of the most urban centres in the city of Blantyre. The 47 health centres served a population of around 1.5 million. 348 trained health staff responded (response rate 95%) compared to 45 health centres in charges (96%). Trained health staff included clinical officers, medical assistants, nurses, assistant environmental health officers (AEHO) and health surveillance assistants (HSA).

**Measures**

The questionnaires for staff and in charges were in principle the same, but questions were phrased specifically according to the two responder groups' roles and responsibilities.

Questions were organized into three main sections: background data, leadership behaviour and effect variables.

Items were ranked on Likert-scales from (1) at a very low degree or strongly disagree, to (5) at a very high degree or strongly agree. Optimal validity for the variables tested was secured by using factor analysis together with principal component extraction rotated to a varimax criterion. The Cronbach's alpha coefficient ( $\alpha$ ) was used as a reliability test. 23 leadership behaviour items were constructed on the background of theory previously presented, and adjusted for the local setting to make up the three dimensions of leadership behaviour: task- (7 items), relation- (9 items) and change- styles (7 items). Effect variables aimed at respondents' subjective experiences and views on key quality measures, but these results are not included in this paper. The associations between leadership styles and staff characteristics, in charge characteristics and contextual variables were then explored through univariate analysis, different t- tests, ANOVA, Pearson product-moment correlation and hierarchical multivariate regression analyses.

**Results**

The three districts represented diversity in terms of health centre ownership (Government/CHAM), team size and rurality (distance to referral centre) (Table I). The actual number of people in in charge and staff groups were distributed as follows: In charges; Clinical officers (8), Medical assistants (23) and nurses (14), and for staff COs (3), MAs (12), nurses (99), AEHOs (6), and HSAs (216). The in charges were significantly older than staff, with nurses being the eldest in the group, but the in charge group had shortest experience at the health centre, with only 2 years of experience compared to staff's 5 years. An exception to this was in charge nurses who also had the longest experience, the same as average staff.

Gender distribution was dominated by males except for staff at urban centres, 75% of which were females. Staff generally scored higher on community integration compared to in charge. Only 21% of nurses had had management training. There was a significant difference in the overall mean age (SD) for those with no management training 38.2 years (12.2 years) and those with training 43.2 years (14.9 years).

Table I. Descriptive data by districts.

Characteristics	Mangochi	Chiradzulu	Blantyre	Total		
Health centre ownership	CHAM (%)	54	34	0	38	
	Government (%)	46	66	100	62	
Team size	median (range)	20(6-88)	15(12-28)	39(28-52)	23(6-88)	
Distance to referral facility (km), median (range)	48(3-119)	13(5-62)	7(3-15)	30(3-119)		
Age	In charge (years), median (range)	Overall	28(20-69)	39(20-49)	38(20-76)	
		Clinical officer	---	39(28-49)	39(28-76)	
	Staff (years), median (range)	Medical Assistants	32(23-60)	28(20-69)	20(20-20)	28(20-69)
		Nurses	50(26-60)	44(40-59)	---	49(26-60)
		Overall	34(21-86)	33(24-57)	34(21-56)	34(21-86)
		Clinical officer	36(29-44)	---	---	36(29-44)
		Medical Assistants	33(22-86)	34(34-34)	24(21-39)	31(21-86)
Nurses	37(21-59)	44(24-57)	43(26-56)	42(21-59)		
Assistant Environmental Health Officer (AEHO)	36(26-40)	34(27-41)	---	36(26-41)		
Health Surveillance Assistant (HSA)	33(24-54)	32(24-56)	33(27-39)	32(24-56)		
Gender	Male (%)	67	59	66	61	
	In charge Staff	57	53	24	49	
Work experience	In charge (months, median, range)	Overall	30(2-144)	24(2-144)	24(6-36)	24(2-144)
		Clinical officer	19(3-30)	---	19(6-36)	19(3-36)
	Staff (months, median, range)	Medical Assistants	36(2-144)	24(2-120)	24(24-24)	24(2-144)
		Nurses	60(2-99)	120(36-144)	---	60(2-144)
		Overall	60(1-372)	72(1-156)	60(1-312)	60(1-372)
		Clinical officer	25(20-31)	---	---	25(20-31)
		Medical Assistants	10(1-178)	60(60-60)	4(1-8)	7(1-178)
Nurses	28(1-312)	43(1-144)	48(6-312)	36(1-312)		
Assistant Environmental Health Officer (AEHO)	15(12-60)	67(18-116)	---	18(12-116)		
Health Surveillance Assistant (HSA)	72(1-240)	72(12-156)	60(2-156)	72(1-240)		
Community integration	Good (%)	47	52	52	49	
	In charge Staff	60	57	49	57	
Management training for in charge	Yes (%)	22	---	61	42	
	Clinical officer	78	33	---	66	
	Medical Assistant Nurse	18	28	---	21	

**Leadership style identification**

The factor analysis revealed two factors signifying two styles. Factor 1. explained 49% of variance with an  $\alpha$ -score of

0.949 and Factor 2. explained 5% of variance with an  $\alpha$ -score equalling 0.844.

Factor 1.

18 (of total) items were loaded on this factor: 9 (9) relation items, 4 (7) change items and 5 (7) task items. Therefore, this factor covers both transactional and transformational leadership styles. It seems apparent that all three behaviour dimensions had partly merged into one style in this material, and hence are called "Trans-style" in the following sections. (See Box 1.)

Box 1.

Factor 1: Items, overview

<p><b>Relation:</b>          The Head facilitates good internal information flow to staff          The Head gives positive feedback on performance          The Head stimulates staff to cooperate with others          The Head facilitates good information flow from community to staff          The Head encourages you to perform          The Head practices open and constructive dialogue          The Head creates staff motivation          The Head takes negative evaluations professionally          The Head is active in solving conflicts</p> <p><b>Task:</b>          The Head gives you a clear role and function          The Head delegates responsibilities          The Head coordinates to utilize human resources          The Head works hard to maintain confidentiality          The Head manages equipment well</p> <p><b>Change:</b>          The Head changes and improves routines          The Head is willing to implement good ideas from staff          The Head easily assesses new ideas from staff          The Head is a good HC-representative in the community</p>
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Factor 2.

The remaining 5 items are loaded on this factor. There were three "change items" (C) and two "task items" (T). (See Box 2.)

<p><b>Task:</b>          The Head strives to make accurate and on time reports          The Head discusses statistics in monthly meetings</p> <p><b>Change:</b>          The Head actively uses HMIS (Health Management Information System) to improve service          The Head actively evaluates quality of service          The Head encourages the community to evaluate the health centre</p>
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Box 2. Factor 2. Items, overview

This leadership behaviour factor is labelled "Control" style throughout this paper. The relation between the two styles, "Trans" and "Control", was investigated using Pearson product-moment correlation coefficient. There was an acceptable and positive correlation between the variables,  $r = 0.65$ ,  $n = 327$ ,  $p < 0.01$ . A paired-samples t-test was conducted to find if perceived styles scores were different. The mean score for "Trans" style ( $M = 4.0799$ ,  $SD = 0.999$ ) were significantly higher than "Control"-style ( $M = 3.9686$ ,  $SD = 0.974$ ) ( $p < 0.05$ ).

## Styles and their associations

Table II presents the mean scores on leadership style for each district. For ownership and gender analysis, an Independent-Samples T Test was applied, and for districts and professions, One-Way ANOVA was performed. The urban health centres staff scored their in charge highest on both styles, but significantly only compared to Mangochi district. Staff at government health centres experienced significantly more "Control" style than at CHAM centres. In the staff group, neither gender nor profession experienced the two styles differently. The same was true when applied to in charges except that nurses were experienced performing "Control" style significantly less. (Table II).

Table II. Styles and categorical background characteristics.

Characteristics		Styles	
		"Trans"	"Control"
Districts	Mangochi	4.0376*	3.8520**
	Chiradzulu	4.0876	4.0483
	Blantyre	4.1187*	4.1930**
Ownership	Government	4.1443	4.1670***
	Christian Health Association of Malawi (CHAM)	3.9397	3.6398***
Gender	Staff	3.9533	3.9078
	Male	4.1208	4.0139
	In Charge	4.0759	4.0127
	Female	4.0310	3.8621
Professions	Staff		
	Clinical Officer	3.500	2.7333
	Medical Assistant	4.1125	3.5833
	Nurse	4.0416	3.8753
	Assistant Environmental Health Officer	4.1042	4.1333
	Health Surveillance Assistant	4.0757	4.0518
	In Charge		
Clinical Officer	4.1118	4.0248****	
Medical Assistant	4.1223	4.1036	
Nurse	3.8998	3.6424****	

Mean scores are reported. Likerts scale 1-5. \*/\*\*, \*\*\*/\*\*\*, \*\*\*\*/\*\*\*\* and \*\*\*\*\*/\*\*\*\*\* indicates significant level of difference at  $p < 0.05$

## Styles and continuous background variables

Styles were correlated with contexts and background characteristics using Pearson product-moment correlation coefficient. The bigger the health centre, the younger and less experienced the in charges were. This applies specifically to the urban centres. The in charge integration is positively correlated with both age and work experience at the centre but negatively correlated with remoteness (distance to referral centre). Both leadership styles are significantly and negatively correlated with in charge age. (See Table III). In charge community integration also has a moderate and positive correlation to the degree of cooperation with local key persons/institutions.

Table III. Correlations; Leadership styles and background characteristics. Means, standard deviation, and Pearson correlations ( $N = 327$ )

Measure	Mean	SD	1	2	3	4	5	6	7	8
1. Total staff	28.96	19.621	-							
2. Distance to referral hospital (km)	34.18	28.354	-0.059	-						
3. Staff age (years)	35.74	8.675	-0.014	-0.11	-					
4. Staff integration (Likerts scale 1-5)	3.62	.909	.002	.006	-0.11	-				
5. In charge Age (years)	40.16	14.009	-.148**	-.032	.058	.131*	-			
6. In charge Work experience (months)	37.42	36.827	-.372**	.082	.063	.039	.373**	-		
7. In charge Integration (Likerts scale 1-5)	3.54	.823	.011	-.147*	-.041	.182**	.372**	.153**	-	
8. "Trans" style (Likerts scale 1-5)	4.0652	.99919	.017	.074	-.062	.084	-.217**	.042	-.068	-
9. "Control" style (Likerts scale 1-5)	3.9657	.97366	-.053	.024	.038	.054	-.253**	.093	-.102	.651**

## Predictors of leadership style

Table IV presents the results of hierarchical multiple regressions analysis to determine in charge characteristics as predictors of leadership style after controlling for context and staff characteristics. The analysis was performed on three populations: first, all staff were included and then divided into two groups, the public health group including

assistant environmental health officers (AEHO) and health surveillance assistants (HSA); and, second, a “clinician” group of clinical officers, medical assistants and nurses. In this study in charges only provided data on their characteristics and their assessment of local community integration and cooperation.

Table IV. Regressions analysis; leadership styles as dependent variables.

Variables	“TRANS” STYLE						“CONTROL” STYLE					
	All Staff N=305-348		Staff Sub Groups				All Staff N=305-348		Staff Sub Groups			
			Public Health N=188-216		Clinicians (N=99-120)				Public Health N=188-216		Clinicians (N=99-120)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
1. Government/ CHAM (Govmt=1)	.066	-.065	0.01	<b>-0.194*</b>	.234	.244	<b>.186**</b>	.026	.158	-.035	.278	.173
2. District Rural 1 (Mangochi=1)	-.074	-.086	-0.024	-0.002	-.068	-.024	-.158	-.114	-.091	.000	-.258	-.167
3. District Rural 2 (Chiradzulu=1)	.013	-.044	0.103	0.022	-.048	-.012	-.046	-.103	-.007	-.065	-.066	-.090
4. Total Staff at Health Centre	.021	.004	.013	-0.021	.010	.047	-.012	-.057	.000	-.034	-.048	-.122
5. Distance to referral hospital	-.144	.092	.196	.027	.075	.191	.117	.002	.099	-.118	.172	.175
6. Staff; Profession (Nurse=1)	-.038	-.042	#	#	.020	.020	.123	.126	#	#	.171	.166
7. Staff Profession (EHO+HSA=1)	-.016	-.015	#	#	-.023	.028	.257	.268	#	#	.103	.138
8. Staff; Gender (Female=1)	-.111	-.108	<b>0.171*</b>	0.154	.003	.017	.082	.075	-.113	-.081	-.041	-.042
9. Staff; Age	-.082	-.068	0.003	-.006	-.093	-.024	.060	.081	.062	.048	.080	.185
10. Staff; Work experience at Health Centre	.034	.041	0.014	.022	-.031	.017	.005	.010	.040	.053	-.094	-.090
11. Staff; Integration into local community	.071	.113	.040	.118	.110	.025	.041	.099	-.031	.059	.159	.148
12. In Charge; Profession (Nurse=1)		-.079		-0.107		-.073		<b>-.229**</b>		<b>-.259*</b>		-.199
13. In Charge; Gender (Female=1)		-.005		-0.084		<b>.336*</b>		.007		-.038		.191
14. In Charge; Age		<b>-.285**</b>		<b>-.408**</b>		-.100		<b>-.289**</b>		<b>-.323**</b>		<b>-.355*</b>
15. In Charge; Work experience at Health Centre		<b>.192*</b>		<b>.188*</b>		.101		<b>.257**</b>		<b>.242*</b>		.237
16. In Charge; Integration into local community		.000		-.149		<b>.391*</b>		-.033		-.157		<b>.288*</b>
ΔR <sup>2</sup>		0.063		0.162		0.115		0.097		0.152		0.097
ΔF		<b>3.532**</b>		<b>6.183**</b>		2.092		<b>6.168**</b>		<b>5.737**</b>		2.023
R <sup>2</sup>		0.041	0.104	0.050	0.212	0.082	0.197	0.103	0.200	0.053	0.205	0.302
F-value		1.012	<b>1.834*</b>	0.898	<b>2.882**</b>	0.635	1.120	<b>2.694**</b>	0.960	<b>2.761**</b>	1.827	<b>1.971*</b>

Footnote: # = Variables have missing correlations and was deleted from analysis. Standardized Beta coefficients are reported. \* = p<0.05 and \*\* = p<0.01.

best predictors for both styles dominated by age, followed by work experience, nurse profession (negatively) and local community integration (details in Table IV).

## Discussion

### Leadership Styles

For the whole study population, we identified two statistically different styles (p<0.05). Trans style (mean= 4.0799) was most frequently experienced and Control style the least experienced (mean= 3.9686).

Our Trans style, a merger of the styles in “the three dimensional model”, could reflect the clinician in charge’s intimate working relation with all staff in this PHC frontline position.

This comprehensive style could also indicate less diversified leadership behaviour due to seemingly inadequate formalized management training, though this needs to be explored further.

“Control” style includes several items, with those covering “Health Management Information System” (HMIS) being especially important. HMIS has been strongly advocated by Ministry of Health (MOH) in strategy documents, workshops, meetings, etc. Hence, an exclusive association between overall leadership/management and the “M” in HMIS by both in charges and staff could be made. This could lead to the conclusion that implementing HMIS becomes the way of leading primary care, which is only partly correct. The importance of “Control style” is underlined by its consistent appearance in several subgroup factor analyses.

The in charges in “Christian Health Association Malawi” (CHAM) centres are perceived to a lesser degree as practicing “Control” style compared to government centres.

This could partly be explained by the fact that the majority of nurses in charge found in CHAM centres, and nurses are perceived practicing “Control” styles significantly less than other professions (Table II). This is also confirmed by regression analysis (Table IV). Another explanation takes an organizational perspective, as HMIS and statistics are mainly done by public health staff in all health centres and also in CHAM centres. Public health staff is even in CHAM centres close to the government structure, and HMIS in these centres could be viewed as somewhat separated from its leadership. Our study indicates that the organizational relationships between public health and clinical departments in CHAM institutions must be explored to find if they also have an impact on leadership behaviour in the facility. HMIS is at the core of the health care development strategy and it is a concern if its implementation is unevenly distributed in health centres depending on ownership.

The two styles scored highest in Blantyre and lowest in the Mangochi district. Several explanations are probable, with one being that Mangochi is a large district with many health centres and long distances, making it a challenge at the district level to support, supervise and encourage efficient leadership practice at sub-district level.

Overall, except for ownership and districts, no leadership style was significantly associated with context characteristics. Even more important is the lack of associations between styles and staff characteristics which questions if staff attributes are sufficiently considered and included in leadership processes. On the other hand, it seems like in charge characteristics have significant impact on style perception.

### “Trans” style

No regression model with context and staff variables was significant and none of these variables contributed to any explained variance in the “Trans” style in Step One of the analysis. In Step Two, in charge characteristics were entered and, in the overall staff population, in charge age was the best and a negative predictor, and in charge work experience was a positive predictor for the style. Analysing the two staff groups (public health and “clinicians”) separately gave in charge age as a negative predictor but was only significant for public health staff. In charge integration into local community gave opposite results for the two groups; the public health group placed it as a negative predictor, but it was a strong positive predictor in the “clinician” group, which also had female in charge as a strong significant predictor for “Trans” style.

### “Control” style

In Step One for all staff, analysis revealed that government health centre ownership was the significant best predictor for this style. This significance disappeared in Step Two when in charge characteristics were included. In the all staff groups, in charge nurses became a significant negative predictor for this style. In charge age was a significant negative predictor within all three staff groups. In charge work experience was a positive predictor in the all staff groups but not significant in the public health group.

In conclusion; in charge characteristics were exclusively the

### ***In charge characteristics and styles associations***

Only 52% of in charges recalled having had any management training and no difference in style performance is found between those reporting having had training and those who hadn't. This raises the question of how management training is taught, learnt and applied. Moreover, as those with no training are found in the youngest in charge group there might be reasons to focus on pre-service training. Young in charges are perceived as practicing more of both styles than older colleagues, as in charge age is clearly negatively associated with both styles (see Table III). Most frequently, young in charges have no management training so other explanations for this group's higher scores must be found. Perhaps other elements in their professional training or in their general education function as substitutes for conventional management training<sup>23</sup>.

Another aspect could be the overall focus in society on organization and leadership, as well as generational differences, where young in charges are more confident with the relational and change aspects of their leadership role. Regression analysis reveals that in charge work experience at health centres is a significant predictor for both styles. This complies with research showing that experience is important for leadership authority<sup>15</sup>. This work experience comprises continuous learning from practicing leadership at the centre in close combination with clinical responsibilities that dominate daily duties. In other words, as others have shown, clinical experience and competency contribute extensively to leadership competency<sup>24</sup>.

Being a leader in primary medical care involves considerable cooperation with several partners in the community. In this study, there was significant and moderate positive correlation between in charge community integration and cooperation with the local community (see Table II). Though not in the overall population, community integration is a clear predictor for both leadership styles in clinician staff subgroup (see Table IV). This finding supports the importance of the relation between health centre leadership and the community. It requires a proactive attitude from the in charge to develop this relationship and then personal community integration becomes an asset.

Research on gender and leadership indicates that female leaders practice more relational style while males practice task oriented style<sup>25</sup>. Later research has had some difficulties finding such differences. Studies focusing on leadership effectiveness underline the importance of contingency, as females perform best when the situation requires interpersonal skills, while males perform best when task competency is required<sup>25</sup>. In our overall material, in both staff and in charge groups, there are no gender differences in the scores on either style. But within a subgroup, the "clinician" group, we find female in charge as a strong significant predictor for "Trans" style. This could confirm earlier research's conclusions of female leaders' propensity to perform a relational leadership style.

### ***Methodological aspects***

From a methodological perspective, the results have been somewhat hampered by psychometric weaknesses, such as scales that could have been more robust and by low Fvalues. The purposeful selection of districts seemed to work, as the number of government and CHAM institutions reflects the overall national distribution and number of centres in

the districts, distances to referral hospitals, rural/urban balance, and team sizes. And finally, a response rate of 95% should make the material reasonably representative for the country. In this way, the results contribute knowledge about and answers to important questions about health centre leadership and the clinician as the in charge of frontline primary health care.

### **Conclusion**

The initial questions in this study can be answered with four major conclusions. First, leadership in health centres can be identified in terms of two major styles, Trans and Control styles. While this diverts a bit from former international research, it reflects the prevailing conditions for PHC frontline leadership. Secondly, it should be of concern that contextual and situational conditions are not reflected in more diversified leadership behaviour, and that subordinates' characteristics are seemingly not associated with leadership behaviour.

Thirdly, the health centre in charge carries characteristics that are associated with leadership behaviour and some seem to function as substitutes for leadership. Young age and work experience could be viewed as contradictions, but both are associated with increasing perceptions of leadership. The importance of good local community relations for leadership has been confirmed. This study has also questioned if current management training is adequate enough to cope with the need.

Finally, we see that leadership behaviour is both associated with organizational differences determined by ownership and in charge profession. Some practical leadership implications from this study can be drawn. First of all, we must understand how leadership behaviour is determined by the specific conditions and comprehensiveness of frontline PHC. This requires a contingency leadership where behaviour always adjusts to the prevailing situation. Then, a subordinate's role and influence must be visible and considered which implies staff empowerment. Finally, implementation of MOH strategies and programmes must be assessed in relation to what implications they have on PHC organization and leadership.

These results and conclusions should confirm that while health centre leadership and management is in good hands, there is room for improvement and should be considered when leadership training for PHC staff and retraining of those already in the field, is being implemented.

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## References

1. Wilkinson D, Hays R, Strasser R, et al. The handbook of rural medicine in Australia. Oxford: Oxford University Press; 2004.
2. Lian OS, Merok E, editors. Mellom nostalgi og avant-garde. Distriktsmedisin i moderne tid [Between nostalgia and avant-garde. Rural medicine in modern times]. Kristiansand: Høyskoleforlaget AS; 2005.
3. Strasser R. Rural health around the world: Challenges and solutions. *Fam Practice*. 2003;20:457–463.
4. Malawi College of Health Sciences. Curriculum for Certificate in Clinical Medicine. Blantyre, MCHC; 2005.
5. Ministry of Health and Population. Malawi Essential Health Package. Lilongwe, MOHP; 2002
6. Ministry of Health and Population. A joint Programme of Work for a Health Sector Wide Approach (SWAp) (2004 – 2010). Lilongwe, MOHP; 2004.
7. Ministry of Health and Population. Health Management Information Bulletin. Special Issue. Lilongwe, MOHP; 2002 ;page 30.
8. World Health Organization; The Health Centre in District Health Systems. Available at: [http://whqlibdoc.who.int/hq/1994/WHO\\_SHS\\_DHS\\_94.3.pdf](http://whqlibdoc.who.int/hq/1994/WHO_SHS_DHS_94.3.pdf)
9. World Health Organization: Improving the performance of health centres in district health systems (1997). Available at: [http://whqlibdoc.who.int/trs/WHO\\_TRS\\_869.pdf](http://whqlibdoc.who.int/trs/WHO_TRS_869.pdf)
10. World Health Organization: The World Health Report 2000 – Health Systems: Improving performance. Available at: [http://whqlibdoc.who.int/whr/2000/WHR\\_2000.pdf](http://whqlibdoc.who.int/whr/2000/WHR_2000.pdf)
11. World Health Organization: World Health Report 2008 - Primary Health Care, Now More Than Ever. Available at: [http://whqlibdoc.who.int/whr/2008/WHO\\_1\\_WHR\\_08.1\\_eng.pdf](http://whqlibdoc.who.int/whr/2008/WHO_1_WHR_08.1_eng.pdf)
12. Dzimbiri L B. Organization and Management Theories: An African Focus. Göttingen: Cuvillier, 2009.
13. Hemphill J K, Coons A E. Development of the leader behaviour description questionnaire. In R M Stogdill & A E Coons (Eds.), *Leader behaviour: Its description and measurement*. Columbus: Bureau of Business Research, Ohio State University. 1957;6-38.
14. Ekvall G, Arvonen J. Change-centred leadership: An extension of the two-dimensional model. *Scandinavian Journal of Management*. 1991;7:17-26.
15. Bass B M. *Handbook of leadership: A survey of theory and research*. New York, Free Press; 1990.
16. Avolio B J, Bass B M. You can drag a horse to water but you can't make it drink unless it is thirsty. *Journal of Leadership Studies*. 1999;5:4-17.
17. Yukl G. *Leadership in Organizations*. New Jersey, Pearson Education Inc.; 2010.
18. Fiedler F E. *A theory of leadership effectiveness*. New York, McGraw-Hill; 1967.
19. Hersey P, Blanchard K H. *The management of organizational behaviour*. 3rd ed. NJ Englewood Cliffs, Prentice Hall;1977.
20. Scott W R. *Organizations. Rational, Natural and Open Systems*. 5th ed. New Jersey, Prentice Hall; 1998.
21. Conger JA, Kanungo RN. Toward a behavioral theory of charismatic leadership in organizational settings. *Academy of Management Review*. 1987;12: 637-647.
22. Martinko MJ, Harvey P, Douglas SC. The role, function, and contribution of attribution theory to leadership: A review. *The Leadership Quarterly*. 2007;18:561-585.
23. Kerr S, Jermier JM. Substitutes for leadership: Their meaning and measurement. *Organizational Behavior and Human Performance*. 1978;22:375-403.
24. Hana J, Rudebeck CE. Leadership in rural medicine: The organization on thin ice? *Scand J Prim Health Care*. 2011;29(2):122-8
25. Eagly AH, Darau SJ, Makhijani MG. Gender and the effectiveness of leaders: A meta-analysis. *Psychological Bulletin*. 1995;117:125-145.