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The effect of leadership on public service motivation: A multiple embedded case study in Morocco

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Abstract

Objectives: We aimed at exploring the underlying mechanisms and contextual conditions by which leadership may influence (public service) motivation of health providers in Moroccan hospitals.

Design: We used the realist evaluation (RE) approach in the following steps : eliciting the initial programme theory, designing the study, carrying out the data collection, doing the data analysis and synthesis. In practice, we adopted a multiple embedded case study design.

Settings: We used purposive sampling to select hospitals representing extreme cases displaying contrasting leadership practices and organisational performance scores using data from the Ministry of Health quality assurance programs from 2011 to 2016.

Participants: We carried out on average 17 individual in-depth interviews in 4 hospitals as well as 7 focus group discussions and 8 group discussions with different cadres (administrators, nurses and doctors). We collected relevant documents (e.g. performance audit, human resource availability, etc.) and carried out observations.

Results: Comparing the Intervention-Context-Actor-Mechanism-Outcome configurations across the hospitals allowed us to confirm and refine our following programme theory: *“Complex leaders, applying an appropriate mix of transactional, transformational and distributed leadership styles that fit organisational and individuals characteristics [I] can increase public service motivation, organisational commitment and extra role behaviours [O] by increasing perceived supervisor support and perceived organizational support and satisfying staff basic psychological needs [M], if the organisational culture is conducive and in the absence of perceived organisational politics [C]”*.

Conclusions: In hospitals, the archetype of complex professional bureaucracies, leaders need to be able to balance between different leadership styles according to the staff's profile, the nature of tasks and the organisational culture if they want to enhance public service motivation, intrinsic motivation and organisational commitment.

Strengths and limitations of this study

Realist evaluation (RE) is useful in explaining how, why and under which conditions an intervention or a social phenomenon (leadership in our study) generates a particular outcome (*in casu* public service motivation).

Continuous refinement of programme theories through RE cycles allows for a cumulative process of knowledge creation by constant shuttling across cases from theory to empirical data and back.

The time and resource constraints of the PhD research project, of which this study is a part, precludes testing and validating existing measurement scales of concepts such as PSM, perceived organisational support and organisational commitment.

Keywords : Leadership, Complex leadership, Public Service Motivation, Health workers, Basic Psychological Needs, Realist Evaluation, Morocco, Hospital, Human Resource Management

Introduction

In low- and middle-income countries (LMIC), poor performance of health workers is a critical barrier to quality of care and to the implementation of health policies in general(2, 3). This often stems from a lack of motivation and to negative attitudes of health workers in the provision of care (4-8).

In the public sector, performance management reforms inspired from New Public Management, including pay for performance and contracting out focus on extrinsic motivation of health providers, risking to crowd out intrinsic motivation (9). Such strategies may also generate negative self-interested behaviours, goal displacement and mistrust (9-15).

Since 1990, scholars have been developing the concept of "*Public Service Motivation (PSM)*", defined as "*an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations.*" (16). PSM involves a set of "*beliefs, values and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity, and that motivate individuals to act accordingly whenever appropriate*" (17). From this perspective, health workers can be driven by an altruistic desire to serve the public interest and the population (9, 18-21). Research in public sector settings and in healthcare produced evidence on the effect of PSM on job satisfaction, reduced turn-over and individual performance, (20-25).

Within the field of PSM, research has focused on how managers and leaders can enhance PSM among public servants (20, 26-30). Complex processes underlie the effect of leadership on PSM, conditioned by contextual factors (professionalism, religion and family education) (31-37) and organisational factors (organisational culture (38, 39) and job characteristics (20, 21). Little attention has been paid to the mechanisms underlying the effect of leadership on PSM in healthcare and public administration settings (22, 24, 26, 28, 30, 40-42) and the existing studies often display methodologies challenges (43, 44).

In response, we set out to explore the causal processes through which leadership, context and organisational attributes influence public service motivation of health workers in Moroccan hospitals. The research questions we address are: 1) How does leadership influence public service motivation of health workers? and 2) Which organisational or contextual conditions underlie the effect of leadership on PSM? This study is part of a larger study on the nature and effects of leadership practices on health workers in 4 Moroccan hospitals.

Methods

We adopted the realist evaluation (RE) approach (45). RE aims at identifying causal mechanisms that explain how, why and under which conditions an intervention or a social phenomenon (leadership in our study) generates a particular outcome (*in casu* PSM)(45). Realists posit that causal mechanisms are generative in nature and embedded in a stratified social reality; they reside in the interplay between individuals, institutional and structural factors (46, 47).

We applied the steps of the realist research cycle (46, 48) to structure our study: 1) eliciting the initial programme theory, 2) designing the study, 3) carrying out the data collection, 4) doing the data analysis and 5) synthesis. We refer to our paper reporting on a case study of leadership for more details on the realist approach ((49) in press).

Step 1 - Eliciting the initial programme theory

Our scoping review of complex leadership (50) allowed us to elicit an initial programme theory (PT) on the relationship between leadership and motivation. It was further developed through a first exploratory case study (coded NHMH) (see Belrhiti,2019 (49) in press) and this led to the initial PT that is the starting point of this study:

“Complex leaders adopt an appropriate mix of transactional, transformational and distributed leadership styles that fit the mission, goals, organisational culture, nature of the tasks of the organisation and the individual characteristics of the personnel. This adaptation of leadership style enhances staff perceived supervisor support and perceived organizational support, and contributes to the satisfaction of basic psychological needs of the staff. (See box 1)”

Box 1 Definition of Basic Psychological Needs

According to self determination theory (1), every individual thrive to satisfy three basic psychological needs (autonomy, competence, relatedness). *Autonomy* corresponds to the sense of volition and willingness ones feel when undertaking specific behaviours. This allow staff to self endorse their actions. *Competence needs* means the feeling self efficacy when experiencing work opportunities that allow individuals to express and use their abilities and skills. *Relatedness* means that staff need to feel mutual respect, consideration from others, connectedness and a sense of belonging to a social group.

More specifically, we identified four causal configurations (Figure 1):

Configuration 1

- Laisser faire leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.

Configuration 2

- Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.

Configuration 3

- By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.

Configuration 4

- Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities.

In this study, we zoom in on the role of public service motivation. We assume that leaders who stimulate staff's awareness of the value of their work to society and its contribution to the public good may enhance PSM and intrinsic motivation. Leaders who are responsive to the basic psychological needs of their staff are likely to stimulate the internalisation of public values and may shift the locus of individual motivation from extrinsic to more autonomous forms of motivation (51). This requires a conducive organisational culture and absence of conflicts between individual and organisational values. We hypothesise that the specific attributes of the Moroccan health system, and specifically its hierarchical organisational culture, may impede the emergence of PSM.

Figure 1 Program theories

Step 2 - Study design: a multiple embedded case study design

We adopted a multiple case study design (52) because it fits the exploration of multifaceted complex phenomena, such as PSM, in real world settings (in our case in 4 hospitals). We defined the case as the relationship between leadership and (public service) motivation. We took a hospital as the unit of analysis. Purposive sampling allowed us to select hospitals that would allow us to test the programme theory. We selected hospitals representing extreme cases, displaying contrasting organisational performance and leadership practices (53, 54). To select hospitals, we used data from the Ministry of Health's quality assurance programme called "concours qualité" from 2011 to 2016 (55, 56). More specifically, we used the leadership scores and the overall organisational quality performance scores (table 1). We refer to (Sahel,2015) (57) for a discussion of the "concours qualité".

We purposefully selected two well-performing hospitals with high leadership scores (NHMH and EJMh) and two poor-performing facilities with low leadership scores (RKMh and SMBA) (Table 1). This selection was informed by independence of cases, variation in hospitals size (seeking to have 1 large and 1 small sized hospital in each category), variation in location (urban, periurban, rural) and accessibility to the first author.

Table 1 : List of high and low-performing hospitals (Ministère de la santé du Maroc, 2011 and 2016 report)

Hospital	Size (number of beds)	Performance scores %		Leadership score (2016)
		2011	2016	
NHMH	<120	65	80.33	75.76
EJMh	>240	46	65.98	57,61
SMBA	>240	44	20.01	14.54

RKMH	<120	44	18.91	6.97
------	------	----	-------	------

Realist evaluation seeks to refine programme theories through a process of specification: the PT is gradually refined by testing it in different settings or in different cases. For this study, we started the data collection in NHMH and developed a first refined PT. This was then tested in EJMh and the poor-performing hospitals RKMh and SMBA. The analysis of each site led to successive refinement, confirmation or disconfirmation of the elements of the initial PT.

Figure 2 - Cases studies and data collection, Morocco, January-June 2018

Step 3 - Data collection

We based the choice of the data collection methods on our programme theory (Figure 1) to ensure that data would allow us to test the initial PT. We used interviews, focus group discussions and document review (see figure 2). We collected data during the period January-June 2018

Interviews

In each hospital, we interviewed health professionals, and senior, middle and operational managers. We explored the antecedents of PSM, its expression and the relationship with leadership and management practices, organisational structure, and cultural context. We used open-ended interview guides tailored to each category of respondents (supplementary file 2). We collected data until saturation was attained. In the first site (NHMH), we carried out 18 individual in-depth interviews (IDI). Subsequently, we carried out 17, 16 and 17 IDI in EJMh, RKMh and SMBA respectively. Each respondent was anonymised and given a unique identifier. Sociodemographic characteristics of the respondents are summarised in table 2 and detailed in supplementary files 3 to 6.

Focus group discussions

To further explore the key constructs used by interviewees in relation to (public service) motivation, we carried out 7 focus group discussions and 8 group discussions with different cadres (administrators, nurses and doctors). This allowed us to deepen the analysis across the different categories of health workers (managers, service providers). The first author led the FGD. Probes, follow up questions and summarised key themes were used and verification from participants was sought at the end of each FGD (58, 59). The FGD facilitator guide is presented in supplementary file 1.

Respondents for the in-depth interviews and the focus group discussions were identified through qualitative purposive sampling(53). All FGD and IDI were audio recorded with the exception of 1 interview. In this specific case, we took notes and transcribed the unrecorded interview using memory recall (60). Following guidance provided by (Miles and Huberman,2016) (61) and (Krueger,2014) (58), we wrote a brief contact summary at the end of any contact with research participants. It included major themes and ideas arising after each interaction. All recordings were transcribed verbatim.Two researchers (ZB and BM) checked the transcripts for accuracy.

Document review

We collected documents at the study sites and at the Ministry of Health. We focused on human resources availability and skill mix, the strategic plans of the hospitals, audit documents and quality assurance reports.

Observations

The first author carried out opportunistic observations (between appointments with interviewee), following the guidance described by (62). Close attention was paid to the interaction between supervisors and staff. We recorded our observations about feelings and goals expressed during informal interaction with hospital staff and external actors and the physical spaces.

Table 2 Respondent characteristics

Managerial function				
	NHMH	EJMH	RKMH	SMBA
Senior managers	4	4	3	4
Middle Managers	3	7	2	5
Line Managers	5	2	4	3
Operational staff	20	30	17	33
Total	32	43	26	45
Professional profile				
	NHMH	EJMH	RKMH	SMBA
Doctors	13	14	4	14
Pharmacist	1	3	1	1
Nurses	14	15	14	20
Administrators	4	11	7	10
Total	32	43	26	45
Age category				
	NHMH	EJMH	RKMH	SMBA
20-30	6	3	5	3
31-40	11	11	6	17
41-50	9	10	9	11
51-63	6	19	6	14
Total	32	43	26	45
Gender				
	NHMH	EJMH	RKMH	SMBA
Female	20	25	10	24
Male	12	18	15	21
Total	32	43	26	45

Step 4 - Analysis

We carried out the data analysis following the 'traditional' analytical phases of compiling data, interpreting, discussion, and drawing conclusions (54). Guided but not restricted by the initial programme theory, we coded all data sources (transcripts, contact summaries and field notes) using different coding techniques (concept, hypothesis and "in vivo" coding)(63). We used the ICAMO (Intervention-Context-Actor-Mechanism-Outcome) heuristic to identify causal configurations. We revisited the data to test conjectural ICAMO configurations (64). We adopted a retroductive approach (65) to contrast patterns of leadership effectiveness between different types of actors (doctors, nurses and administrators). We compared these patterns with the chronology of the CEO succession periods.

NVivo 10 software (66) was used to manage the data. Milestones in the coding process were discussed during research teams meetings.

Step 5 – Synthesis

When the data from all sites were analysed, we compared the ICAMO configurations with the initial programme theory and modified it accordingly. We followed the RAMESES II reporting standards in writing the research report and this paper (48).

Ethical considerations

The study was granted approval by the Moroccan Institutional Review Board, Rabat (n°90/16) and the Institutional Review Board of ITM (N° 1204/17). We informed all interviewees before the start of data collection about the study objectives, topics, type of questions and their right to refuse being interviewed and to interrupt the interview at any time. This information was also provided in an information sheet and reiterated before the start of interview when the written consent procedure was explained. The respondents were asked to sign the informed consent form if they agreed to participate in the study. The forms were co-signed by the researcher and a copy was given to research participants.

Patient and public involvement statement

There was no direct patient involvement in this study.

RESULTS

In this section, we first present for each hospital the main leadership and management practices, the perspective of staff, their views on public service motivation, and a summary. Then we present a summary of the cross case analysis and the resulting refined programme theory.

EJM Hospital

Main leadership and management practices

In EJM, there were two successive leadership periods. Between 2012 and 2015, CEO 1 had a transactional leadership style, relying on administrative procedures, assertion of power, and

1
2
3 compliance with rules and procedures. He was perceived by his staff as being distant and not
4 responsive to their needs for professional autonomy. Conflicts and tensions with unions and doctors
5 were high. He left in 2015.
6

7
8 *“CEO 1 was too strict in the application of the new hospital procedures. We could not discuss*
9 *the rules with him. The hospital cannot be managed by strictly following the rules. For*
10 *instance, in compliance with the new procedures, CEO 1 decided to implement night shifts for*
11 *administrative staff and stopped the night shifts of nursing supervisors. The administrators*
12 *did not accept to carry out this task because the new procedures did not mention who should*
13 *do this and how this ‘overtime’ job would be reimbursed”. EJM 3 Administrator.*
14

15
16 In mid-2015, CEO 1 was replaced by CEO 2. He was upto then the chief medical officer of the
17 hospital and had quite some management experience. For instance, he was the director of EJM
18 between 2002 and 2006. In 2016, EJM won the first price at the quality contest. CEO 2 had an
19 explicit vision on leadership:
20

21 *“I had the chance to manage the hospital in 2002. This allowed me to really know the*
22 *personal and vice versa. Now, we work as a team in that sense that staff are involved in*
23 *decision making. This is very important. In a real world setting, participative decision making*
24 *is very important, because you avoid many problems. When you involve them, you avoid*
25 *resistance. If staff is involved from the beginning, they will adopt the solution and will not*
26 *feel that it was imposed on them. This will be totally different if the solution was imposed on*
27 *the staff. (...) When you involve staff in decision making, you build trust relationships. Trust*
28 *relationships are very important in our context, where the hospital director has little power*
29 *over his staff. [...] When we explain to staff well defined objectives. They know which*
30 *organisational objectives to pursue. Achieving these goals at the operational level bring*
31 *legitimacy to the hospital direction. It is important that health workers know that you are*
32 *thriving to achieve these objectives. This is what I call credibility.” EJM 7, CEO 2*
33
34
35

36 The perspective of staff

37 38 39 *Leadership style*

40
41 Our analysis shows that the staff found that the transactional leadership style of CEO 1 was
42 incongruent with their professional values and their need for autonomy. This contributed to mistrust
43 in the management team, low organisational commitment and a high level of tension with unions.
44
45

46 *CEO 1, with whom I worked, was authoritative. This was not congruent with my values. I*
47 *value participative decision making. I try to share with others, I need to be treated the same*
48 *way by my superior. CEO 1 was just commanding: ‘Do this, give this to this person’. I would*
49 *have accepted and engaged with him if he would have involved me in participative decision*
50 *making with other members of the hospital committee, if he would have used polite*
51 *inquiries, like “Would it be possible to do this?, rather than giving orders without listening to*
52 *team members or involving them in decision making.” EJM 25, pharmacist.*
53
54

55 The participative decision making style of CEO 2 and his consideration for individuals restored trust
56 in the management team and reduced the tensions with the unions.
57

58 *“Now everything works smoothly. He does things that are right. He reacts to wrong doings.*
59 *He is sympathetic with all staff. CEO2 has a long experience. He knows everyone, he knows*
60

1
2
3 *their personal characters, motivation and personal needs.... He is very successful in doing*
4 *that! He knows how to reduce tensions between his close collaborators. He takes decisions*
5 *smoothly. As a physician, he is able to reduce tensions between medical union*
6 *representatives and internal coalitions within the medical departments. His door is open to*
7 *everyone. He listens to staff. He does not rush decisions. He maintains a low level of tension*
8 *within the hospital. He does not complicate things. The former CEO took rapid decisions and*
9 *was facing much resistance [...].CEO 2 involves his close collaborators and chiefs of*
10 *departments in decision making. This way, they adhere to his decisions. He listened to them.*
11 *He has a participative leadership.” EJM 25, pharmacist.*

12 13 14 15 **Public Service Motivation**

16
17 Frontline providers said that compassion and self-sacrifice are important components of their public
18 service motivation.
19

20
21 *“While recording electrocardiographs on patients, I was constantly communicating with*
22 *them. Sometimes, women shared with me their feelings, their worries about their siblings,*
23 *their fear of death, their personal life and stories about their deceased or ill husbands. They*
24 *were often crying. I feel their sufferings as if I were living with them”. EJM 17, Nurse.*

25
26 We found that the intrinsic motivation of health providers is sustained by their feelings of
27 competence and their ability to adequately apply their professional skills and competencies.
28

29
30 *“I love my job. I chose deliberately to work at the emergency unit. I love working at*
31 *the emergency unit. I am totally engaged. Handling serious medical emergencies is*
32 *a motivation in itself”. EJM 38, Doctor.*

33
34 Participative decision making was perceived by staff as congruent with their professional identity
35 and their public service values. It enhanced their self-esteem and satisfied their needs for autonomy
36 and relatedness. It also increased their perceived autonomy support.
37

38
39 *“Leaders needs to be fair, listen to our needs and resolve our organizational issues. Most*
40 *importantly, they need to understand my professional needs, take into consideration my*
41 *suggestions and contributions to work. This make me feel satisfied. In contrast, with the*
42 *former leader, I was not feeling secured. He was exerting excessive control. I suffered the*
43 *martyr!. I was constantly under constant threats. I even sent an administrative*
44 *correspondence to the ministry of health against the unjust treatment. I was just trying to do*
45 *my job correctly!”. EJM 17, Nurse.*

46 47 **Summary**

48
49 Our analysis showed that the transactional leadership of CEO 1 did not address the basic
50 psychological needs of the staff and specifically the need for autonomy. This not only contributed to
51 low organisational commitment and reduced public service motivation, but also to tensions with
52 the unions.
53

54
55 In contrast, CEO 2 had a transformational leadership style: he effectively understood how people are
56 motivated, listened to them, and clearly communicated his vision and objectives to the health
57 workers. He showed genuine concern for the needs of his staff, effectively resolving problems
58 through a constructive dialogue with informal leaders and union representatives. He also involved
59 his close collaborators and heads of department in decision making.
60

1
2
3 CEO 2 also stimulated the emergence of distributed leadership to lower levels of the organisation,
4 which increased trust between the staff and the CEO, and reduced resistance to change. This was
5 considered by mid-level managers as crucial in maintaining the motivation of staff, in particular
6 given the perceived limited decision spaces they have over their personal work. We saw that not
7 only senior managers but also mid-level managers engaged in distributing leadership. For the latter,
8 participating in decision making increased their perceived leader support and satisfaction of their
9 autonomy needs.
10

11 12 13 ***RKM Hospital***

14 15 16 **Main leadership and management practices**

17
18 This hospital has known two leadership periods since 2010. From 2010 to 2012, CEO 1 displayed
19 transactional leadership: he assiduously monitored staff attendance, planned their shifts and dealt
20 with his staff through administrative correspondence. He was confronted with staff resistance.
21

22
23 Because of shortage of intensive care anaesthetists, nurses anesthesists often take over their tasks,
24 like sedating patients in the operating theatre without medical supervision. When they were
25 confronted with excessive control by the director, they stopped carrying out this “medical” task. This
26 has negatively impacted the continuity of surgical activities. In this case, nurses used their
27 professional expertise as a source for discretionary power (e.g. ability to intubate and sedate
28 patients in the operating theatre).
29

30
31 *“(CEO1) was suspicious and was strictly applying the regulations to correct the staff*
32 *absenteeism. When the cat’s away, the mice will play. There were many conflicts, especially*
33 *with nurse anesthetists who did not comply with the control of attendance. As a result, they*
34 *stopped sedating patients and argued that they are not allowed to sedate patients without*
35 *an intensive medical care anaesthetist”. RKMH8, close collaborator.*
36

37
38 CEO2 managed the hospital between 2012 and 2018. He favoured a distant *laissez faire* leadership
39 approach and was often absent. He would then be replaced by the chief nursing officer who adopted
40 the same leadership style. The latter seemed overwhelmed by day-to-day operational management
41 responsibilities. During our field work, we noted that the management of the hospital was poor. No
42 organizational action plans were available, and there were no meetings. Strikingly, our focus group
43 discussion with nurses was the only meeting they attended in three years. We observed high level of
44 absenteeism among hospital staff.
45

46 47 **The perspective of staff**

48 49 ***Leadership style***

50
51
52 Our analysis shows that the close collaborators, administrators and technical staff appreciated the
53 leadership of CEO 1, because he reduced role ambiguity and job pressure. However, nurses and
54 doctors were unhappy with his overcontrolling behaviour and engaged in resistance. Also CEO 2 was
55 appreciated by his close collaborators, now because of his gentle wording and good interpersonal
56 management. However, doctors and nurses perceived his *laissez-faire* leadership as non-responsive
57 to their needs in terms of resources and working conditions.
58
59
60

1
2
3 Respondents complained management engaging in clientelism and nepotism, which they found to
4 conflict with their public service values.
5

6 *“The chief of the admission office is carrying out tasks that are not his. He manages the*
7 *personnel! Staff who come from the town of CEO2 are privileged compared with others.*
8 *Decisions are guided by his close interpersonal relationship with them”.* RKMH 11, Nurse.
9

10
11 *“For instance, when I take necessary administrative measures to correct staff absenteeism,*
12 *the provincial district officer takes no actions to sanction these deviant behaviours. My*
13 *authority is weakened. Either you accept staff’s deviant behaviours and thus participate in*
14 *this “crime”, or you are intransigent and staff will build an alliance against you and you will*
15 *be demonised. As you may know, unions and political parties are corrupt, they seek only the*
16 *interest of their members and not the general interest”* RKMH 15, Administrator.
17

18
19 Staff perceived that they were unable to treat adequately patients because of lack of material and
20 ressources (e.g. laboratory tests, mobile radiology, etc.) and the inadequate organisational support
21 to their supply needs. They did not feel self-efficacious. Some felt that they were doing more harm
22 than good for patients. This reduced their PSM and negatively impacted their psychological well
23 being.
24

25 *“We suffer because we transfer patients for simple technical procedures that we could have*
26 *handled locally”* RKMH 10, Nurse.
27

28
29 *“We often ask relatives to help us carry patients with a fractured femur to the fixed X Ray*
30 *table. By doing this, we may worsen the fracture. I feel sorry when I had to ask sick patients*
31 *to go themselves to the fixed X-Ray table. No organisational support is given, despite our*
32 *relentless asking the administration to provide us with a mobile X Ray system.”*RKMH 14
33 Radiology technician
34

35
36 Poor management and bad working conditions led to low levels of perceived organisational support
37 amongst nurses. Staff felt inadequately supported by their supervisors and were left to face
38 problems in the execution of their daily tasks. This created a stressful job pressure they were unable
39 to deal with.
40

41 *“ During the transfer (of a patient to the referral hospital), we do not focus on what care to*
42 *give to the patient, but we are stressed by the poor conditions of the ambulance. It is not an*
43 *ambulance, it is a wreck!”* RKMH 12, Nurse anesthesiologist”
44
45

46 Reluctance of the managers to start up legal procedures against patients or families who assaulted
47 nurses or doctors further reduced the latter’s trust in the management.
48

49 *“Many times, staff were assaulted. The management just forgave the assaulter, because the*
50 *CEO knows him. Leaders should support staff, ... support them in a sense that if someone of*
51 *us is assaulted one day, I mean a nurse staff in his shift or a doctor, staff should be protected.*
52 *This assault should not be considered as an assault on an individual person, it is an assault on*
53 *all of us, on all health care providers cadres in general.”* RKMH 24, Nurse, ED.
54
55

56 **Public Service Motivation**

57
58
59 In this hospital, we found that frontline providers value the importance of adequately serving
60 patients and improving health outcomes. They derive satisfaction from relieving suffering and saving

lives, or at least preventing them from developing complications. Health workers mentioned that compassion, self-sacrifice, serving the underprivileged and caring for the poor are crucial drivers of their public service motivation.

“We often sacrifice our own time for the sake of patients and for the sake of God to avoid unnecessary delays and prevent parturients from getting complications, for exemple, severe neurological and cardiac complications of post partum haemorrhage. We even help patient’s families to pay for ambulance fees in order to avoid delays”. RKMH 14, midwife

“Here, I work a lot with vulnerable citizens. It is a reward in itself to serve poor patients. It is my source of motivation”. RKMH 3, Doctor

We noted that the *laisser-faire* and transactional leadership had a negative effect on staff with high levels of public service motivation. It led to psychological distress, low organisational commitment and self-interested behaviour. This was compounded by the perceived organisational politics (see. clientelism and nepotism).

Summary

Our analysis showed that the *laisser-faire* and transactional leadership in this hospital did not respond to the basic psychological needs of health workers. This led to reduced public service motivation with negative consequences on their psychological well-being, because of the lack of opportunities of experiencing valued patient outcomes (e.g saving lives).

The leadership styles also contributed to low perceived organisational support, which in a context of perceived organisational politics, in turn lowered organisational commitment, and increased self-interested behaviour and mistrust between administration and staff.

SMBA Hospital

Main leadership and management practices

In SMBA hospital, one of the low-performing hospitals, there were three leadership periods. CEO 1 (2007-2010) displayed strong transactional leadership, emphasising conformity with rules and procedures and insisting on top-down hierarchal management. He carried out many performance audits and clinical supervisions, and organised training to staff. He showed high moral standards and was both respected and feared by staff. He was replaced in 2010 by CEO 2, who retired in 2013. He had some experience in management, displayed transactional leadership and stressed the conformity with rules similarly to his predecessor. In 2014, CEO 2 was replaced by CEO 3, who adopted a *laisser-faire* leadership. The hierarchical line was no longer respected. He managed the hospital poorly: no organisational action plans were available, and he did not carry any audit nor supervision. No inter-units meetings were held and the departmentalisation process was halted. During our field work, we observed a strike of the clerical officers in charge of hospital admission and of the private company in charge of security in reaction to bad working conditions and perceived low responsiveness of management to their needs.

The perspective of staff

Leadership style

CEO 1 and 2 were highly appreciated by the administrators and their close collaborators. The health professionals (nurses and doctors) pointed to reduced perceived organisational support and to lack of participative decision making. Under the leadership of CEO 3, staff felt less supported by their supervisors. They said they were left to deal with problems alone. Lack of clarity of goals led health workers to perceive role ambiguity and job pressure.

Poor management and low responsiveness of leaders to staff needs in terms of improving working conditions decreased their public service motivation.

“Leaders do not play a role in our motivation. [...]. We came to work despite constraints and poor working conditions. If we were only motivated by working conditions, we wouldn’t come to work. The management team was even unable to timely replace a broken window of our reception desk counter!” SMBA 29, Reception desk officer

Our respondents also mentioned the clientelism and nepotism of CEO3, who privileged some staff and patients over others. This led to perceived organisational politics and mistrust, and contributed to low organisational commitment, demotivation and crowding out of public service motivation.

“In this hospital, there are some external actors who pretend to do social work, and pretend to act as benefactors. These external actors, often members of associations, intervene illegitimately in hospital activities. They are like parasites. They definitely impact on our productivity. They are like stockbrokers. They do not care about citizens. They frequently mediate between citizens and services providers. The CEO responds quickly to patients needs when these actors are involved. This what I call clientelism. This is not fair! All citizens are equal” SMBA 21, support staff, reception desk.

Public service motivation

Physicians and nurses perceived compassion with patients’ conditions and self sacrifice as major components of their public service motivation.

“Patients are important for me because I got sick myself. So, I sense what the patients are feeling. My family members, my daughter and my grandmother got sick. I feel the pain patients are suffering from. I can feel their suffering.” (SMBA 35, Nurse).

Public service motivation is also driven religious cultural beliefs including elements of fear of God and divine rewards.

“We work because of our sense of humanity, our own consciousness and our fear of God. One day, we will be asked about the quality of work we have done in the past. We feel sorry for patients, SMBA 29, reception desk officer”

Staff said they were suffering from psychological distress due to poor working conditions, and experienced feelings of guilt because of their inability to perform their job adequately and to ease

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3 their patients suffering. Lack of opportunities to experience positive patients outcomes reduced
4 their public service motivation.
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7 *“When you do not have necessary material you are in trouble! It is not only a constraint but a*
8 *source of suffering. Instead of relieving patients’ distress, it is us who get stressed.” SMBA 45,*
9 *Doctor.*

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11 *«Here, ressources are limited compared to the teaching hospital where we were trained.*
12 *Real world practices are really different. When we first were assigned to this hospital we*
13 *could not change things around. This is really depressing. We have the ability to provide*
14 *specialised care but we do not have the necessary ressources to do it ! , SMBA 42, Doctor.*
15

16 This impacted negatively on their perceived organisational support. This led to crowding out of their
17 public service motivation and lowered their organisational commitment and their well-being.
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19
20 *“It is really depressing. I do not want to work anymore because I do not have the necessary*
21 *ressources.[...] I often cry when I watch newborns suffering from intramuscular injections*
22 *because nurses are not skilled to administrater intraveineus infusions to newborns and often*
23 *use instead intramuscular injection for 10 days. I am not only frustrated, I hate entering*
24 *neonatology service!!!. I only grudgingly go see my patients whereas in the past I loved*
25 *providing neonatology care. I cannot stand seeing newborn almost dying of hypoglycaemia*
26 *0.3g/l because they are not adequately fed. This is due to the acute shortage of nurses (one*
27 *nurse per shift) who are unable to reconcile between administering antibiotics and*
28 *treating infections and baby feeding. I am not anymore motivated to cure newborns*
29 *‘infections but I am terribly stressed avoiding newborns to die from hypoglycaemia. If babies*
30 *are left alone with the feeding bottles they may die by suffocation. How can we come*
31 *motivated to work in the next morning? of course not!!! SMBA 42, paediatrician.*
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34 Shortage of material reduced their ability to properly care for patients, which reduced their PSM and
35 contributed to a reduced sense of competency, self-efficacy and autonomy.
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38 *“During my pediatric residency, I practiced neonatology and neonatal reanimation for two*
39 *years, I developped many skills that I am not using now because I do not have the necessary*
40 *equipments. I have only few neonatal resuscitation tables and two sources of oxygen for 21*
41 *patients. I do not have a respirator. During my training I learned to intubate and manage*
42 *cardiorespiratory distress. Now, in neonatology service instead of using unavailable syringe*
43 *pumps,we manage pediatric diabetes by intravenous perfusion. I never been thought to do*
44 *this!!!”. SMBA 42, paediatrician.*
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47 *"I am very proud to serve my population, however I am truly unsatisfied. We have strong*
48 *faith and we work eagerly to serve people. But our faith is not sufficient. We need more*
49 *ressources. For exemple, I am often called for patients with cranial trauma. We do what is*
50 *possible depending on available ressources. Cerebral trauma patients need an emergency*
51 *cerebral CT-scan and the golden hour must be respected. When they arrive at the hospital,*
52 *often with a delay, the CT Scan is unavailable. It is often out of order. What could we do? In*
53 *this case, We help teams transfer the patient to the nearby hospital in Marrakech. We often*
54 *collect money to pay ambulance fuel and to avoid extradelays. I feel that my contribution to*
55 *patient health is useless, despite being present for about 5 or 6 six hours at night. I feel that*
56 *our contribution is hampered by organisational problems that are beyond our control”.*
57 *SMBA 43, intensive care anaesthetist*
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Summary

In this hospital, we found that leaders (like CEO 1) who are perceived as showing a high sense of moral and ethical standards, and who stimulate the awareness of staff of public service values and their contribution to society, were positively considered by some cadres. For the administrative staff, the transactional leadership displayed by CEO 1 led to higher clarity of goals, reduced job pressure and increased extrinsic motivation. However, it was negatively perceived by frontline workers because they felt it did not respond to their needs for autonomy.

Laisser faire leadership crowded out public service motivation by reducing frontline healthworkers' opportunities to help. Such management did not respond to the basic psychological needs of staff and led to low organisational commitment.

In Table 3, we present a summary of the perspectives of staff on the leadership and management practices. We present in the first column key summary data derived from the initial exploratory case study (NHMH hospital) and detailed in (Belrhiti,2019(49) in press) .

Table 3 - The perspectives of staff on the leadership and management practices

NHMH	EJMH	RKMH	SMBA
<p>CEO 1 (2007-2013) <i>Transactional leadership</i> Conformity to rules and procedures, role model. Improved staff working conditions. Staff perspective Strong perceived leader support, which catalysed the quality culture</p> <p>CEO 2 (2014-2016) <i>Transformational leadership</i> Clear communication of his vision. Genuine concern for staff needs. Enhanced staff mission valence. Distributed leadership Stimulated network formation, "kind heart actions" Staff perspective Responsiveness to their basic psychological needs Reinforced existing clan culture. Positive organisational climate (mutual trust and team work). This led to increased organisational commitment and extra role performance, In 2016, the hospital won the second price in the national quality contest).</p>	<p>CEO 1 (2012-2015) <i>Transactional leadership</i> Power-assertive attitude. Overemphasis on compliance with rules and procedures Staff perspective Perceived distant leader. Low perceived autonomy support. Decreased organisational commitment. Mistrust, conflicts and tensions with unions.</p> <p>CEO 2 (2015-2018) <i>Transformational leadership</i> Good communication of vision and objectives. Genuine concern for the needs of staff. Distributed leadership Constructive dialogue to resolve professional issues. Catalysing role of mid-level managers. Participative decision making. In 2016, the hospital won the first price of the quality contest. Staff perspective High perceived autonomy support. Good congruence with professional and public service motives. Trust relationship between staff and management team. Reduced tensions with unions.</p>	<p>CEO (2010-2012) <i>Transactional leadership</i> Strict application of administrative procedures Staff perspective Appreciated by administrators and close collaborators. Increased extrinsic motivation of staff. Nurses and doctors resisting to his overcontrolling behaviour engaging in conflicts and strikes.</p> <p>CEO2 (2012- 2018) <i>Laisser faire leadership</i> Often absent. Chief Nursing officer overwhelmed by day to day operational management duties. Staff perspective Appreciated by administrators and close collaborators. Nurses and doctors unhappy about lack of responsiveness to their needs and the poor working conditions. Conflictual organisational climate, characterised by high job pressure and role ambiguity. Perceived organisational politics (nepotism and clientelism), contributing to perceived unfairness.</p>	<p>CEO 1 (2007-2010) <i>Transactional leadership</i> Enforcement of hierarchy. Emphasis on conformity with rules and procedures. Audit and clinical supervision. High moral standards. Staff perspective Highly appreciated by close collaborators and administrative staff. Nurses and doctors perceived a lack of participative decision-making and reduced perceived autonomy support.</p> <p>CEO 2 (2010-2013) <i>Transactional leadership</i> Enforcing conformity with rules and regulations. Close supervision, administrative sanctions. Staff perspective Well appreciated by administrators and close collaborators Perceived unresponsiveness to nurses' needs.</p> <p>CEO 3 (2014-2018) <i>Laisser faire leadership</i> Hierarchical line not respected. No meetings, no clinical supervision. No inter-unit interaction. Staff perspective Decreased organisational commitment</p>

<p>1 2 3 4 CEO 3 (July 2016-Sep 2017): Laisser faire leadership 5 6 Passive attitude. Reliance on administrative 7 correspondence. 8 Poor communication with staff. Hierchical line 9 not enforced 10 Staff perspective 11 Role ambiguity, high job stressors. 12 Unresponsiveness to staff needs. Deteriorating 13 working conditions. Perceived organisational 14 politics. Demotivation, conflicts and tensions 15 with unions. 16 17 CEO 4 (Oct 2017-March 2018): 18 Transactional leadership 19 Reinforcing the hierachical line. Building 20 alliance with informal leaders. 21 Staff perspective 22 Distant leader. 23 Reduced perceived autonomy support. 24 Improved working conditions. 25 Claryfing goals reduced role ambiguity and job 26 pressures for admin. staff 27 Reduced interaction between health units. 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46</p>			<p>Inadequate woking conditions and supply of consumables. Low perceive organisational support. High role ambiguity and job pressure. High level of perceived organisational politics.</p>
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Cross case analysis and refined causal configurations

Comparing the initial programme theory with the results of the analysis of the data from the hospitals EJM, RKM and SMBA allowed us to refine it (table 4). We used the Intervention-Context-Actor-Mechanism-Outcome (ICAMO) configuration to structure the analysis (64). We confirmed or refuted the four causal configurations presented above.

ICAMO configuration 1: *Laisser faire* leadership and PSM

This configuration was confirmed in the RKM and SMBA hospitals (See table 4).

Laisser faire leadership [I] decreases intrinsic motivation and public service motivation [O] of health providers [A] by being less responsive to the basic psychological needs of autonomy, competence and relatedness [M] and by reducing perceived organisational support [M] in situations of reduced opportunities to experience positive patient outcomes [C].

Laisser faire leadership [I] contributes to mistrust between administration and staff, resistance to change and tensions with unions [O] by inducing perceived job pressure and role ambiguity [M] for health providers [A]

Laisser faire leadership [I] reduces public service motivation [O] in a context of perceived organisational politics (clientelism and nepotism)[C] by being incongruent with individual public service values [M] of all cadres [A]

Figure 3 - *Laisser-faire* leadership and PSM (ICAMO 1)

ICAMO configuration 2 - Transactional leadership and PSM

This configuration is confirmed by empirical data from the three hospitals (EJM, RKM, SMBA). As a result, we retain ICAMO 2 as follows:

If transactional leadership ensures adequate support and working conditions of administrative staff [I] or if enforces a clear hierarchical line [I], it can reduce job pressure [M] and reduce role conflict [M] and thus increase the extrinsic motivation of administrative staff [O] and the level of organisational commitment [O]. If transactional leaders [I] are felt by health professionals [A] to be distant, this can reduce perceived autonomy support and reduce the satisfaction of the need for mutual respect (relatedness) [M], leading in turn to reduced motivation [O] and low organisational commitment [O].

Figure 4 Transactional leadership-PSM (ICAMO 2)

ICAMO configuration 3: Transformational leadership and PSM

Configuration 3 is confirmed only in EJMh hospital (Table 4).

Transformational leadership understood as inspiring staff (walking the talk), infusing jobs with public service values and showing individual consideration to staff [I] increases public service motivation [O] by responding to basic psychological needs of autonomy and relatedness [M] of all staff [A] and contributes to higher organisational commitment and expressed mutual trust between staff with administration [O].

Figure 5 Transformational leadership and PSM (ICAMO 3)

ICAMO configuration 4: Distributed leadership and PSM

Distributed leadership was observed only in the high performing hospitals EJMh and NHMH.

Distributed leadership in the sense of creating a supportive and open climate and good relations between staff [I] increased staff public service motivation [O] and organisational commitment [O] and led to extra role behaviours by satisfying staff basic psychological needs [M] and increasing trust in management teams [M].

Figure 6 Distributed leadership and PSM (ICAMO4)

As described in table 3 and 4, we noticed that only CEO2 in NHMH and CEO2 in EJMh displayed complex leadership understood as the balancing between transactional, transformational and distributed leadership that fits best the diversity of professional profiles, the nature of the tasks and the organisational culture. Transactional leadership fits the administrators who value role clarity and reduced job ambiguity, whereas transformational and distributed leadership addresses the basic psychological needs of health providers. The other CEOs either adopted a transactional leadership style or *laissez faire* leadership, which was not well received by a majority of staff.

The four ICAMOs presented above allowed us to refine our initial programme theory:

Complex leaders, applying an appropriate mix of transactional, transformational and distributed leadership styles that fit organisational and individuals characteristics [I] can increase public service motivation, organisational commitment and extra role behaviours [O] by increasing perceived supervisor support and perceived organizational support and satisfying staff basic psychological needs [M], if the organisational culture is conducive and in the absence of perceived organisational politics [C].

Table 4 Testing the initial configurations in the study sites

Programme theories based on literature review and the study of NHMH Hospital	EJMH Hospital	RKMH Hospital	SMBA Hospital
Laissez faire leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.	Not confirmed not refuted.	Confirmed and refined: <i>Laissez faire</i> leadership decreases the levels of [...]. contributes to general malaise, mistrust between administration and staff and decreases public service motivation and <i>psychological well being. This mechanism is triggered by the lack of opportunities for experiencing positive patient outcomes and the perceived organisational politics</i>	Confirmed.
Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.	Confirmed and refined. Transactional leaders are effective on staff extrinsic motivation leading in turn to reduced motivation”and low organisational commitment and tension with unions.	Confirmed	Confirmed
By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.	Confirmed	Not confirmed nor refuted, because no transformational leadership was enacted in this hospital.	Not confirmed nor refuted because no transformational leadership was enacted in this hospital
Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding	Confirmed	Not confirmed nor refuted, because no distributed leadership was enacted in RKMH.	Not confirmed nor refuted because no distributed

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<p>them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities</p>			<p>leadership was enacted in SMBA.</p>
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For peer review only

Discussion

In this study, we explored mechanisms and contextual conditions by and in which leadership influences (public service) motivation of health workers.

Our study shows, in line with leadership literature (67, 68), that *laissez faire* leadership decreases intrinsic motivation and public service motivation of all cadres by being less responsive to the basic psychological needs of autonomy, competence and relatedness of staff and by reducing perceived organisational support (1, 2, 69).

Our findings suggest that *transactional* leadership, when it ensures adequate managerial support and improvement of working conditions, can enhance the extrinsic motivation of staff by reducing role ambiguity and job pressure, and by increasing perceived organisational support. This is supported by other studies (70-73). However, we also found indications that *transactional* leadership can crowd out intrinsic motivation and public service motivation of health workers by reducing the satisfaction of their needs for autonomy. This is supported by other studies in LMIC (10, 11, 74-76).

We found *transformational* leaders who clearly communicate their vision and walk the talk, infuse jobs with public services meaning, and show individual consideration can enhance PSM by responding to their need for relatedness. This is supported by recent studies, for instance (21, 39, 42, 77-82). Transactional leadership can lead to higher organisational commitment and extra role behaviours (83, 84).

Distributed leadership facilitated teamwork, information flows, and team cohesion. It nurtured feelings of connectedness, enhancing the perception of autonomy support and perceived organizational support. This led to creative problems solving, collective learning and better performance at the quality assurance contest, in ways similarly to other study findings (4-8, 85).

Our study supports the hypothesis that the effect of leadership on PSM depends on the degree of responsiveness to basic psychological needs (autonomy, competency and relatedness). This points to the relevance of self-determination theory (1, 51) as a middle range theory that may frame how individual psychological mechanisms underlie the effects of leadership on staff motivation (extrinsic motivation, intrinsic motivation and PSM). It also supports the hypothesis that the effect of leadership on PSM is conditioned by the existence of a conducive organisational culture (a clan culture and absence of perceived organisational politics). This is explained by value congruence, understood as the degree of congruence between individual and organisational values, which represents a major mechanism in the integration of public service values in individual behaviours (34, 86-88).

In summary, in healthcare organisations, leaders able to adapt their leadership practices to the nature of individuals and organisational characteristics (complex leaders) are likely to be more effective. They foster networking and connections between staff by distributing leadership responsibilities and reinforcing the role of middle managers, infusing jobs with meaning and creating constructive dialogues with professional health workers (5, 50, 89-92).

Study contributions, validity and limitations

This study contributed to fill the gap in leadership studies in general (93-95) and in healthcare specifically (96, 97) by unravelling the underlying mechanisms of leadership effects on health

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3 workers' motivation. It contributes to the study of leadership in North African muslim countries, an
4 neglected field of research (98).
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6 This study contributes to the case that realist evaluation can contribute to building a better
7 understanding of complex phenomena in health systems (46). Realist evaluation proved an
8 appropriate approach to unravell the relationship between leadership and PSM, and thus
9 responded to calls of PSM scholars for robust research methodologies (24, 26, 28, 40-42).
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12 The validity of our study findings derive from theoretical guidance in study design, sampling and
13 analysis and cross-validation (99-101) and theoretical replication across cases (65). Theoretical
14 replication allows for a retroductive process of knowledge creation (65) by constantly shuttling from
15 theory to empirical data and by continuously refining our programme theories across negative and
16 positive cases.
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19 There are limitations to our study. The causal configurations developed here are the most plausible
20 explanation for the outcomes observed in our study, but may likely not be the unique explanation.
21 Further empirical testing in a larger set of cases would enable to further refine the programme
22 theories. a second limitation is that we did not quantitatively measure public service motivation,
23 organisational commitment, perceived organisational support and other variables. The time and
24 resource limits of the PhD study of which the study presented here is part precluded testing and
25 validating existing scales for these constructs.
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29 **Implications for practice**

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31 In Morocco, similarly to other low- and middle-income countries (81), the hierarchical culture within
32 the Ministry of Health favours transactional leadership styles (102, 103) and this may impede the
33 emergence of PSM (104-106). We raise some concerns in relation to the actual health reforms carried
34 out in Morocco, which are inspired by New Public Management (e.g. performance-based
35 management, contracting out and public-private partnerships) and which may have negative
36 consequences on health workers performance by facilitating the practice of transactional leadership,
37 focusing on extrinsic rewards (and sanctions) and crowding out the expression of PSM and self-
38 altruistic behaviours of frontline health workers. Policy makers should stimulate the development of
39 complex leadership competencies (e.g. fostering network building, generative sense making, see also
40 (50) in their capacity building programs.
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43

44 **Conclusion**

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46 In the context of health care organisations, the motivation of health workers relies on individual,
47 organisational and contextual antecedents. The effectiveness of leaders depends on the degree of
48 responsiveness to the basic psychological needs of health workers and on value congruence
49 between organisational and individual values. Leaders should learn how to adapt their leadership
50 practices to the organisational characteristics (nature of task, mission valence) and to type of
51 motivation of health workers (extrinsic versus intrinsic and PSM). Further research is needed to
52 explore the role of value congruence and to understand how the social institutions (i.e. religion,
53 family education, professionalism) may shape the expression of public service motivation of health
54 workers in low and middle income countries.
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Abbreviations :

CEO : Chief Executive Officer

CQ : "Concours Qualité"

FGD : Focus Group Discussion

ICAMO : Intervention, Context, Actor, Mechanism, Outcome.

IDI : In-depth Interview

ITM : Institute of Tropical Medicine

LMIC : Low -and Middle-Income Countries

PHO : Provincial Health Officer

PSM : Public Service Motivation

RE : Realist Evaluation

Declarations :**Ethics approval and consent to participate**

The research protocol was approved by the Moroccan Institutional Review Board (n°90/16) of the Faculty of Medicine of Pharmacy, Rabat and the Institutional Review Board of the Institute of Tropical Medicine, Antwerp (n° 1204/17). All participants have been informed prior to the conduct of the research and written consent forms were signed by the respondents and countersigned by the researcher. A signed copy was given to each respondents.

Consent for publication : « Not Applicable »

Availability of data and material : « Not Applicable »

Competing interests

The authors declare that they have no competing interests.

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Authors contributions

All the four authors contributed to the original design and analysis and writing of the manuscript. ZB carried out the data collection. BM cross checked the transcripts. Initial coding was done by ZB and discussed between the research team members. ZB edited the final draft. All authors read and approved the final manuscript.

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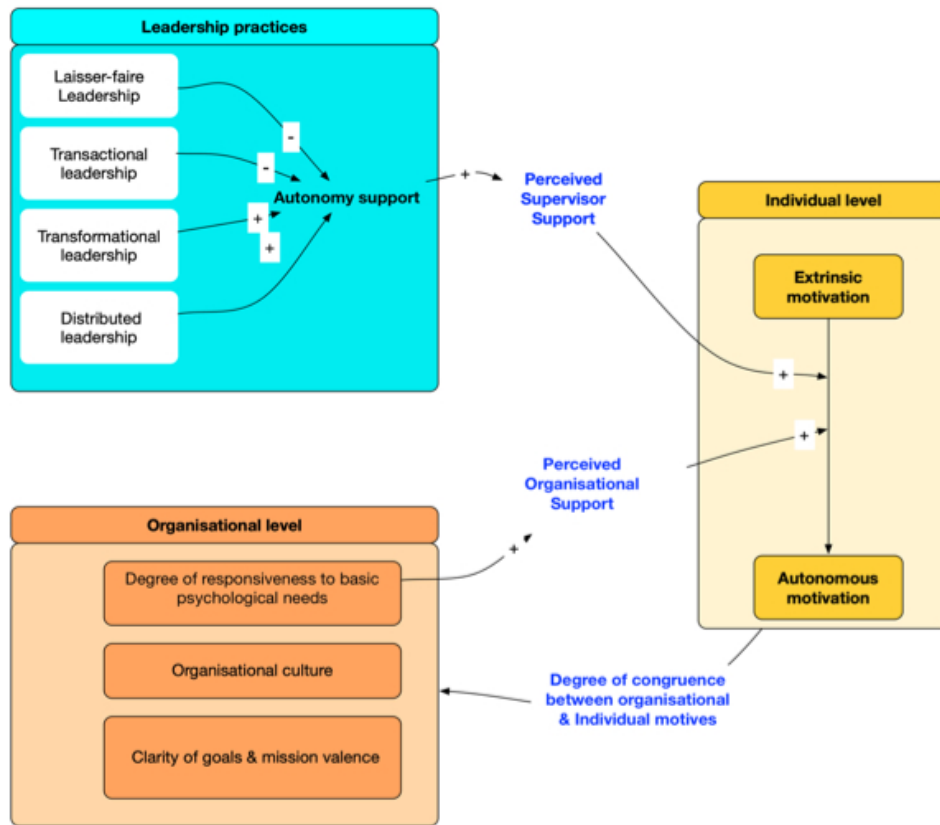


Figure 1 Program theories

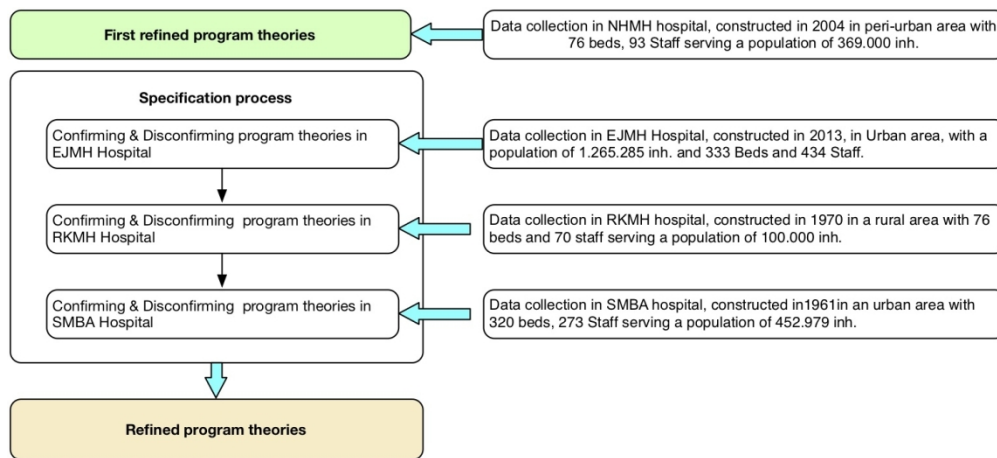


Figure 2 - Cases studies and data collection, Morocco, January-June 2018

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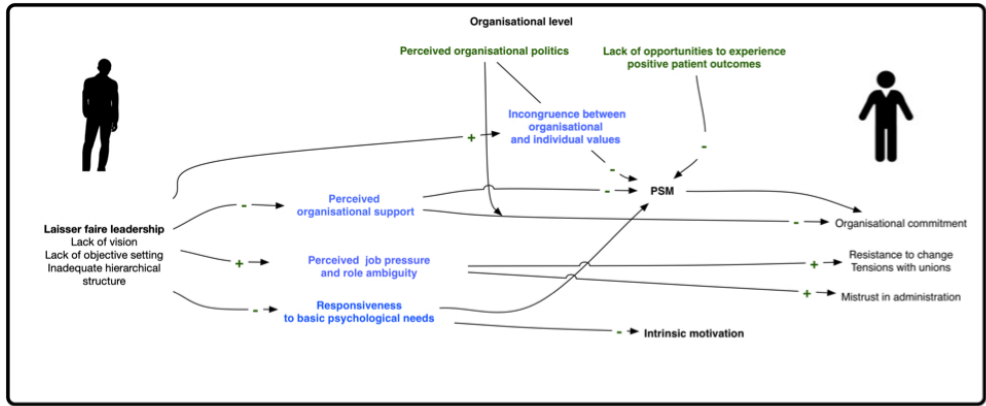


Figure 3 - Laissez-faire leadership and PSM (ICAMO 1)

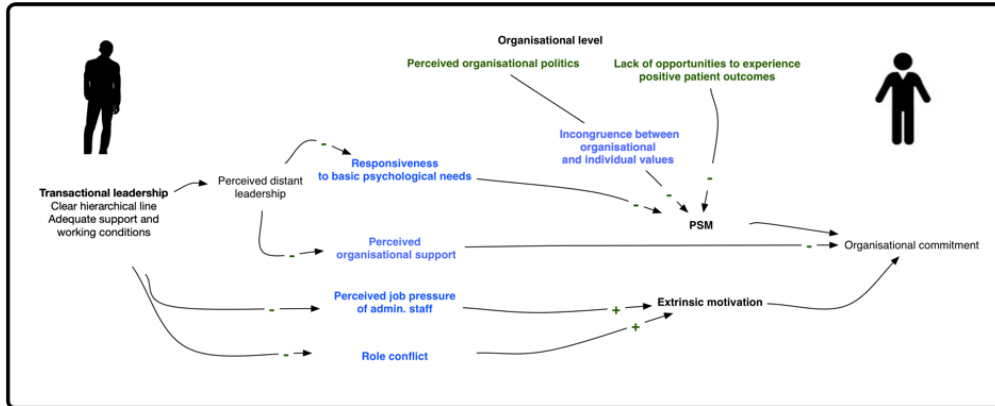


Figure 4 - Transactional leadership-PSM (ICAMO 2)

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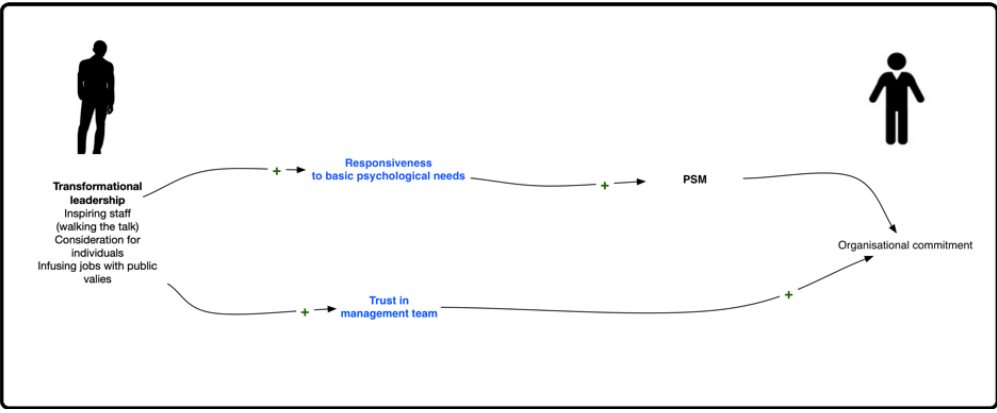


Figure 5 - Transformational leadership and PSM (ICAMO 3)

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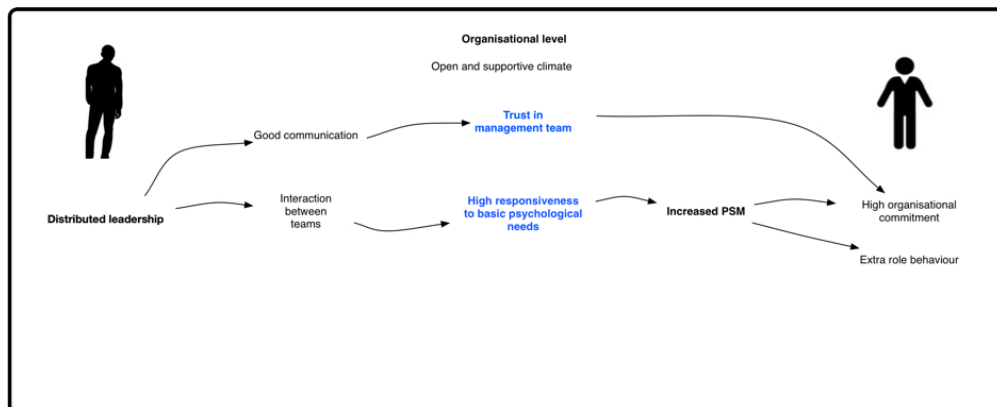


Figure 6 Distributed leadership and PSM (ICAMO4)

Supplementary file 1 Focus Group Discussion Guide (senior managers)

themes	Questions	Prompts, clarifications, vignettes
Motivation	<p>Q 1 : What motivates at work at this hospital?</p> <p>Q 2 : How do you feel at work at the hospital?</p>	
Motivation au Service Publique	<p>Q2 : Why did you choose to the work at the public sector?</p> <p>You told me about your (de) motivation in the public sector? Could you explain your (de) motivation?</p>	
	<p>Q3 : Sering citizen, what does it mean to you ? Give me examples from your professional experience?</p>	
	<p>Q 4 : Did you think about quitting the public service? If Yes why? If no why not?</p>	<p>Vignette 1 Mr or Dr Rachid work in this hospital for 10 years, he did not leave the public hospital to work in the private sector because he feel satisfied with the help he is providing to the local underprivileged population What do you think about Dr /Mr Rachid perspective?</p>
	<p>Q 5 : Do that you are well paid according to your contribution to this hospital? If Yes why? If no why ?</p>	<p>Vignette 2 : Dr/Mr Rachid a has accompanied many patients in medical transfers although he is not well remunerated. he continues to do it when asked. What do you think about his attitude ?</p>
Leadership	<p>Q6 : in your opinion, what does it mean a good leader?</p> <p>Q 7 : How could you describe the leadership of your supervisors?</p> <p>Q 8 : Does managers' leadership matters for you to be performant at work?</p>	<p>Vignette 3 :A manager told me that leadership is important in the motivation of staff. Do you agree with that. ?</p> <p>Do you agree that leadership play a role in the staff performance?</p>
Interaction Leadership-Motivation	<p>Q 9 : How would you describe your the relationship between your interaction with the leader an your motivation ?</p>	
Organisational performance	<p>Q : According to you, what explains the good/bad performance of your hospitals in "Concours Qualité"?</p>	<p>Who was involved? Who took leadership roles? Who was responsible for decision making?</p>
	<p>Q : What makes you perform well/bad under the leadership of Mr/Mme ?</p>	

Supplementary file 2 Open ended interview

This interview topic guide gives an indication of the main questions that will be asked in the interviews of health service managers and providers. Core questions were adapted to meet the specificity of each category (senior managers (Questions 1 to 4), intermediate managers (Questions 1 to 5); health professional (Questions 2 to 5)).

Components	Objectives/Remarks / Questions
Introduction	Researcher presentation (Name, qualification, institution)
	Interview objectives
	Explain the procedure (Time, Clarification questions, information about voluntary participation and the autonomy to respond or not to sensitive question and information about consent forms)
	Explain confidentiality and data anonymisation procedures
	Ask permission to record the interview (Audio record and notes)
	Obtain informed consent
Adjust the recording device	Make sure that equipment is functioning and the room is not noisy
General part	To get overall idea about the interviewee and make him/ her comfortable
	Q : How old are you ?
	Q : Could you describe your actual job position? Your tasks?
	Q : How long have you been working in your actual position?
	Q : How long have you been working in this hospital?
	Q : Where have you worked before? In which function?
Introduction to specific questions	Transition to core questions
1) Leadership Practices	Q : Could you describe you task?
	Q : Could you describe your role as a manager? P
	Q : What is your vision about leadership? What do a good leader means to you?
	Q : Would you give me some examples of your practice of leadership?
	Q : What challenges are you confronted with in you leadership practice ?
	Q : In your opinion, how could you describe your influence on staff behaviours ?
2)Hospital Performance	Q : In your opinion, what explain the good/bad performance of your hospital in "Concours Qualité" ?
	Q : Is it related to leadership? Does leadership matters?
3) Individual Performance	Q : In your opinion, what are the major reasons why a health professional is performant in health care provision?
	Q : According to you, what are he facilitators to individual performance?

	Q : In your opinion, what are the barriers to maintain a good individual performance for health professionals ?.
	Q : Is there a difference in the motivation between different cadres of health professionals or not?
	Q : How could you play a role in the motivation of your staff/ colleagues?
4) Public Service Motivation	Q : Could you explain what motivates you to work in this hospital ? (Motivation intrinsic/extrinsic)
	Q : how do you feel working in this hospital?
	Q : What attaches you to this hospitals, if any? Q: how do you describe this attachment?
	Q : serving citizens, what does it means for you?
	Q : Did you think about quitting the public service? If yes, why? If no, why?
	Q : Do you feel that you are doing tasks that go beyond your responsibilities, or not?
	Q : how could you describe you engagement about the organisational mission and vision?
	Q : Do you feel that you have the necessary information, tools and support to carry on your task, or not?
	Q : Do you engage in supplementary efforts without contingent financial rewards ? Could you give me some examples?
5) Leadership in your organisation	Q : Could you describe leadership practices in your organisations?
	Q : Do you feel that you are supported by your superior ? By management teams?
	Q : Could you provide some examples of leadership practices of your superior?
	Q : how could you describe relation between your interaction with your leader and your motivation?
Summary and debriefing	During this interview you gave me useful informations that are relevant to this study.
	Q : Is there something that you see as important regarding our topic we did not mention? If Yes we could discuss it. We do have time.
	Q: Do you have questions for me?

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Supplementary file 3 : sociodemographic characteristics case 1

Code	Age	Managerial function	Professional profile	Genre
NHMH 1	41-50	Senior Manager	Doctor (General Practitioner)	Female
NHMH 2	31-40	Non Manager	Nurse anesthesiologist	Male
NHMH 3	41-50	Non Manager	Doctor (General Practitioner)	Male
NHMH 4	20-30	Non Manager	Nurse	Female
NHMH 5	31-40	Intermediate Manager	Pharmacist	Female
NHMH 6	41-50	Non Manager	Doctor (Specialist)	Male
NHMH 7	41-50	Senior Manager	Doctor (General Practitioner)	Male
NHMH 8	31-40	Operational Manager	Midwife	Female
NHMH 9	51-63	Operational Manager	Nurse	Female
NHMH 10	51-63	Non Manager	Doctor (Specialist)	Male
NHMH 11	41-50	Non Manager	Doctor (Specialist)	Male
NHMH 12	31-40	Operational Manager	Administrator	Female
NHMH 13	20-30	Non Manager	Nurse	Female
NHMH 14	31-40	Non Manager	Administrator (former nurse)	Female
NHMH 15	31-40	Non Manager	Administrator (was a nurse)	Male
NHMH 16	51-63	Operational Manager	Doctor (General Practitioner)	Female
NHMH 17	20-30	Operational Manager	Nurse	Male
NHMH 18	20-30	Non Manager	Nurse	Female
NHMH 19	31-40	Non Manager	Laboratory technician	Female
NHMH 20	31-40	Non Manager	Nurse anesthesiologist	Female
NHMH 21	31-40	Non Manager	radiology technician	Female
NHMH 22	31-40	Non Manager	Nurse	Female
NHMH 23	20-30	Non Manager	Nurse (Operating theater)	Male
NHMH 24	20-30	Non Manager	Nurse anesthesiologist	Female
NHMH 25	51-63	Intermediate Manager	Doctor (General Practitioner)	Male
NHMH 26	41-50	Non Manager	Doctor (Specialist)	Female
NHMH 27	31-40	Non Manager	Doctor (General Practitioner)	Female
NHMH 28	51-63	Non Manager	Doctor (Specialist)	Female
NHMH 29	51-63	Non Manager	Cashier (Technical staff)	Female
NHMH30	41-50	Senior Manager	Nurse	Male
NHMH31	41-50	Intermediate Manager	Doctor (General Practitioner)	Female
NHMH32	41-50	Senior Manager	Doctor (Specialist)	Male

Supplementary file 4

Code	Age	Managerial function	Professional profile	Genre
EJMH 1	41-50	Senior Manager	Nurse	Female
EJMH 2	41-50	Senior Manager	Doctor (General Practitioner)	Male
EJMH 3	31-40	Intermediate Manager	Administrator	Male
EJMH 4	51-63	Non-Manager	Pharmacy technician	Female
EJMH 5	31-40	Non-Manager	Pharmacist	Female
EJMH 6	31-40	Non-Manager	Pharmacist	Female
EJMH 7	51-63	Senior Manager	Doctor (General Practitioner)	Male
EJMH 8	51-63	Non-Manager	Administrator	Male
EJMH 9	41-50	Non-Manager	Doctor (General Practitioner)	Male
EJMH 10	41-50	Non-Manager	Doctor (General Practitioner)	Female
EJMH 11	41-50	Non-Manager	Doctor (Specialist)	Male
EJMH 12	31-40	Intermediate Manager	Laboratory technician	Female
EJMH 13	51-63	Intermediate Manager	Doctor (Specialist)	Male
EJMH 14	31-40	Intermediate Manager	Nurse	Female
EJMH 15	41-50	Non-Manager	Technician (Technical staff)	Female
EJMH 16	41-50	Non-Manager	Administrator (former nurse)	Female
EJMH 17	41-50	Non-Manager	Administrator (former nurse)	Female
EJMH 18	51-63	Non-Manager	technician (Technical staff)	Female
EJMH 19	20-30	Non-Manager	Technician (Technical staff)	Female
EJMH 20	51-63	Non-Manager	Administrator	Female
EJMH 21	41-50	Non-Manager	Administrator (former midwife)	Female
EJMH 22	51-63	Non-Manager	Administrator	Female
EJMH 23	51-63	Intermediate Manager	Nurse	Male
EJMH 24	31-40	Non-Manager	Nurse	Female
EJMH 25	31-40	Intermediate Manager	Pharmacist	Male
EJMH 26	41-50	Non-Manager	Doctor (Specialist)	Male
EJMH 27	51-63	Non-Manager	Doctor (Specialist)	Female
EJMH 28	51-63	Non-Manager	Doctor (Specialist)	Male
EJMH 29	51-63	Non-Manager	Doctor (General Practitioner)	Male
EJMH 30	31-40	Non-Manager	Doctor (Specialist)	Male
EJMH 31	51-63	Non-Manager	Doctor (Specialist)	Male

EJMH 32	51-63	Operational Manager	Radiology technician	Female
EJMH 33	20-30	Non-Manager	Nurse	Female
EJMH 34	20-30	Non-Manager	Midwife	Female
EJMH 35	51-63	Non-Manager	Laboratory technician	Female
EJMH 36	31-40	Non-Manager	Nurse anaesthesiologist	Female
EJMH 37	51-63	Non-Manager	Auxiliary Nurse	Female
EJMH 38	31-40	Non-Manager	Doctor (General Practitioner)	Female
EJMH 39	31-40	Non-Manager	Nurse	Male
EJMH 40	51-63	Operational Manager	Nurse	Male
EJMH 41	51-63	Non-Manager	Nurse	Male
EJMH 42	51-63	Intermediate Manager	Doctor (General Practitioner)	Male
EJMH 43	51-63	Senior Manager	Administrator	Female

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3 **Supplementary file 5 sociodemographic characteristics of respondents from RKMH hospital**
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Code	Age	Managerial function	Professional profile	Genre
RKMH 1	41-50	Non-Manager	Doctor (General Practitioner)	Male
RKMH 2		Intermediate		
	41-50	Manager	Pharmacist	Male
RKMH 3	41-50	Non-Manager	Doctor (Specialist)	Female
RKMH 4	51-63	Operational Manager	Nurse	Female
RKMH 5	41-50	Operational Manager	Administrator	Male
RKMH 6	51-63	Senior Manager	Nurse	Male
RKMH 7	51-63	Operational Manager	Nurse	Male
RKMH 8	51-63	Operational Manager	Technician (Technical staff)	Female
RKMH 9	41-50	Non-Manager	Cashier (Technical staff)	Male
RKMH 10	31-40	Non-Manager	Nurse	Male
RKMH 11	20-30	Non-Manager	Nurse	Female
RKMH 12	20-30	Non-Manager	Nurse anesthesiologist	Female
RKMH 13	20-30	Non-Manager	Radiology technician	Female
RKMH 14	31-40	Non-Manager	Midwife	Female
RKMH 15	51-63	Senior Manager	Administrator	Male
RKMH 16	41-50	Non-Manager	Doctor (Specialist)	Female
RKMH 17	20-30	Non-Manager	Radiology technician	Female
RKMH 18	20-30	Non-Manager	Nurse anesthesiologist	Male
RKMH 19	31-40	Non-Manager	Nurse	Male
RKMH 20	51-63	Non-Manager	Nurse	Female
RKMH 21	31-40	Non-Manager	Midwife	Female
RKMH 22	31-40	Non-Manager	technician (Technical staff)	Male
RKMH 23	41-50	Senior Manager	Doctor (General Practitioner)	Male
RKMH 24	31-40	Operational Manager	Nurse	Male
RKMH 25	41-50	Non-Manager	Technician (Technical staff)	Male
RKMH 26	41-50	Non-Manager	technician (Technical staff)	Male

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3 **Supplementary file 6 socio demographic characteristics from SMBA Hospital**
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Code	Age	Managerial function	Professional profile	Genre
SMBA 1	51-63	Non Manager	Nurse	Male
SMBA 2	31-40	Non Manager	Nurse	Female
SMBA 3	41-50	Senior Manager	Doctor (General Practitioner)	Male
SMBA 4	31-40	Senior Manager	Nurse (Filling administrative position)	Male
SMBA 5	51-63	Senior Manager	Nurse	Male
SMBA 6	41-50	Line Manager	Midwife	Female
SMBA 7	51-63	Non Manager	Nurse	Female
SMBA 8	51-63	Non Manager	Nurse	Female
SMBA 9	51-63	Non Manager	Nurse	Female
SMBA 10	51-63	Non Manager	Nurse	Female
SMBA 11	20-30	Non Manager	Midwife	Female
SMBA 12	31-40	Non Manager	Nurse anaesthesiologist	Female
SMBA 13	31-40	Non Manager	Nurse	Female
SMBA 14	31-40	Non Manager	Doctor (General Practitioner)	Female
SMBA 15	31-40	Non Manager	Doctor (Specialist)	Female
SMBA 16	41-50	Non Manager	Doctor (General Practitioner)	Male
SMBA 17	51-63	Line Manager	Nurse	Male
SMBA 18	41-50	Line Manager	Doctor (General Practitioner)	Male
SMBA 19	41-50	Non Manager	Doctor (Specialist)	Female
SMBA 20	41-50	Non Manager	Doctor (General Practitioner)	Male
SMBA 21	51-63	Non Manager	Technician (Technical staff)	Male
SMBA 22	41-50	Non Manager	Technician (Technical staff)	Male
SMBA 23	51-63	Line Manager	Doctor (General Practitioner)	Male
SMBA 24	51-63	Line Manager	Nurse	Female
SMBA 25	31-40	Operational Manager	Nurse	Male
SMBA 26	31-40	Non Manager	technician (Technical staff)	Male
SMBA 27	41-50	Non Manager	Technician (Technical staff)	Female
SMBA 28	41-50	Non Manager	Administrator	Male
SMBA 29	31-40	Non Manager	Technician (Technical staff)	Male
SMBA 30	31-40	Non Manager	Cashier (Technical staff)	Female

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4	SMBA 31	51-63	Non Manager	technician (Technical staff)	Female
5	SMBA 32	41-50	Senior Manager	Doctor (Specialist)	Male
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7	SMBA 33	31-40	Non Manager	Pharmacist	Female
8					
9	SMBA 34	20-30	Non Manager	Pharmacy technician	Female
10					
11	SMBA 35	51-63	Non Manager	Nurse	Female
12	SMBA 36	41-50	Operational Manager	Administrator	Male
13					
14	SMBA 37	51-63	Non Manager	Nurse (Operating theatre)	Female
15					
16	SMBA 38	31-40	Non Manager	Nurse	Female
17					
18	SMBA 39	31-40	Non Manager	Nurse	Male
19					
20	SMBA 40	31-40	Operational Manager	Doctor (Specialist)	Male
21	SMBA 41	20-30	Non Manager	Psychiatric nurse	Male
22					
23	SMBA 42	31-40	Non Manager	Doctor (Specialist)	Female
24					
25	SMBA 43	31-40	Non Manager	Doctor (Specialist)	Female
26					
27	SMBA 44	31-40	Non Manager	Doctor (General Practitioner)	Female
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29	SMBA 45	51-63	Non Manager	Doctor (General Practitioner)	Male
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Table 1 List of items to be included when reporting realist evaluations

TITLE	Reported in document Y/N/Unclear	Page(s) in document
1		In the title, identify the document as a realist evaluation
SUMMARY OR ABSTRACT		
2		Journal articles will usually require an abstract, while reports and other forms of publication will usually benefit from a short summary. The abstract or summary should include brief details on: the policy, programme or initiative under evaluation; programme setting; purpose of the evaluation; evaluation question(s) and/or objective(s); evaluation strategy; data collection, documentation and analysis methods; key findings and conclusions Where journals require it and the nature of the study is appropriate, brief details of respondents to the evaluation and recruitment and sampling processes may also be included Sufficient detail should be provided to identify that a realist approach was used and that realist programme theory was developed and/or refined
INTRODUCTION		
3	Rationale for evaluation	Explain the purpose of the evaluation and the implications for its focus and design
4	Programme theory	Describe the initial programme theory (or theories) that underpin the programme, policy or initiative
5	Evaluation questions, objectives and focus	State the evaluation question(s) and specify the objectives for the evaluation. Describe whether and how the programme theory was used to define the scope and focus of the evaluation
6	Ethical approval	State whether the realist evaluation required and has gained ethical approval from the relevant authorities, providing details as appropriate. If ethical approval was deemed unnecessary, explain why
METHODS		
7	Rationale for using realist evaluation	Explain why a realist evaluation approach was chosen and (if relevant) adapted
8	Environment surrounding the evaluation	Describe the environment in which the evaluation took place
9	Describe the programme policy, initiative or product evaluated	Provide relevant details on the programme, policy or initiative evaluated
10	Describe and justify the evaluation design	A description and justification of the evaluation design (i.e. the account of what was planned, done and why) should be included, at least in summary form or as an appendix, in the document which presents the main findings. If this is not done, the omission should be justified and a reference or link to the evaluation design given. It may also be useful to publish or make freely available (e.g. online on a website) any original evaluation design document or protocol, where they exist
11	Data collection methods	Describe and justify the data collection methods – which ones were used, why and how they fed into developing, supporting, refuting or refining programme theory Provide details of the steps taken to enhance the trustworthiness of data collection and documentation
12	Recruitment process and sampling strategy	Describe how respondents to the evaluation were recruited or engaged and how the sample contributed to the development, support, refutation or refinement of programme theory
13	Data analysis	Describe in detail how data were analysed. This section should include information on the constructs that were identified, the process of analysis, how the programme theory was further developed, supported, refuted and refined, and (where relevant) how analysis changed as the evaluation unfolded

Table 1 List of items to be included when reporting realist evaluations (*Continued*)

RESULTS		
14	Details of participants	Report (if applicable) who took part in the evaluation, the details of the data they provided and how the data was used to develop, support, refute or refine programme theory
15	Main findings	Present the key findings, linking them to contexts, mechanisms and outcome configurations. Show how they were used to further develop, test or refine the programme theory
DISCUSSION		
16	Summary of findings	Summarise the main findings with attention to the evaluation questions, purpose of the evaluation, programme theory and intended audience
17	Strengths, limitations and future directions	Discuss both the strengths of the evaluation and its limitations. These should include (but need not be limited to): (1) consideration of all the steps in the evaluation processes; and (2) comment on the adequacy, trustworthiness and value of the explanatory insights which emerged In many evaluations, there will be an expectation to provide guidance on future directions for the programme, policy or initiative, its implementation and/or design. The particular implications arising from the realist nature of the findings should be reflected in these discussions
18	Comparison with existing literature	Where appropriate, compare and contrast the evaluation's findings with the existing literature on similar programmes, policies or initiatives
19	Conclusion and recommendations	List the main conclusions that are justified by the analyses of the data. If appropriate, offer recommendations consistent with a realist approach
20	Funding and conflict of interest	State the funding source (if any) for the evaluation, the role played by the funder (if any) and any conflicts of interests of the evaluators

help guide the reporting of their realist evaluations may find the last two columns ('Reported in document' and 'Page(s) in document') as a useful way to indicate to others where in the document each item has been reported.

Scope of the reporting standards

These reporting standards are intended to help evaluators, researchers, authors, journal editors, and policy- and decision-makers to know and understand what should be reported when writing up a realist evaluation. They are not intended to provide detailed guidance on how to conduct a realist evaluation; for this, we would suggest that interested readers access summary articles or publications on methods [1, 19, 20, 22, 23]. These reporting standards apply only to realist evaluation. A list of publication or reporting guidelines for other evaluation methods can be found on the EQUATOR Network's website [24], but at present none of these relate specifically to realist evaluations. As part of the RAMESES II project we are also developing quality standards which will be available as a separate publication and training materials for realist evaluations [11].

How to use these reporting standards

The layout of this document is based on the RAMESES publication standards: realist syntheses [17, 18], which itself was based on previous methodological publications (in particular, on the 'Explanations and Elaborations' document of the PRISMA statement [25]). After each item there is an exemplar drawn from publically available evaluations followed by a rationale for its inclusion. Within these standards, we have drawn our exemplar texts mainly from realist evaluations that have been published in peer review journals, as these were easy to access and publically available. Our choice of exemplar texts should not be taken to imply that the standard of reporting of realist evaluations that have not been published in peer review journals is in any way substandard.

The exemplar text is provided to illustrate how an item might be written up in a report. However, each exemplar has been extracted out of a larger document and so important contextual information has been omitted. It may thus be necessary to consult the original document from which the exemplar text was drawn to fully understand the evaluation it refers to.

What might be expected for each item has been set out within these reporting standards, but authors will

BMJ Open

The effect of leadership on public service motivation: A multiple embedded case study in Morocco

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Manuscript ID	bmjopen-2019-033010.R1
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Date Submitted by the Author:	30-Oct-2019
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Primary Subject Heading:	Health services research
Secondary Subject Heading:	Qualitative research, Research methods, Public health
Keywords:	Human resource management < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Leadership, Public Service Motivation, Complex leadership, Basic Psychological Needs, Health workers

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Manuscripts

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4 1 **The effect of leadership on public service motivation: A multiple**
5 2 **embedded case study in Morocco**
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8 4 Zakaria Belrhiti ^{1,2,3}, Wim Van Damme^{2,3}, Abdelmounim Belalia¹, Bruno Marchal²
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17 10 Word count : 8807 word
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Abstract

Objectives: We aimed at exploring the underlying mechanisms and contextual conditions by which leadership may influence “public service motivation” of health providers in Moroccan hospitals.

Design: We used the realist evaluation (RE) approach in the following steps : eliciting the initial programme theory, designing the study, carrying out the data collection, doing the data analysis and synthesis. In practice, we adopted a multiple embedded case study design.

Settings: We used purposive sampling to select hospitals representing extreme cases displaying contrasting leadership practices and organisational performance scores using data from the Ministry of Health quality assurance programs from 2011 to 2016.

Participants: We carried out on average 17 individual in-depth interviews in 4 hospitals as well as 7 focus group discussions and 8 group discussions with different cadres (administrators, nurses and doctors). We collected relevant documents (e.g. performance audit, human resource availability, etc.) and carried out observations.

Results: Comparing the Intervention-Context-Actor-Mechanism-Outcome configurations across the hospitals allowed us to confirm and refine our following programme theory: *“Complex leaders, applying an appropriate mix of transactional, transformational and distributed leadership styles that fit organisational and individuals characteristics [I] can increase public service motivation, organisational commitment and extra role behaviours [O] by increasing perceived supervisor support and perceived organizational support and satisfying staff basic psychological needs [M], if the organisational culture is conducive and in the absence of perceived organisational politics [C]”.*

Conclusions: In hospitals, the archetype of complex professional bureaucracies, leaders need to be able to balance between different leadership styles according to the staff’s profile, the nature of tasks and the organisational culture if they want to enhance public service motivation, intrinsic motivation and organisational commitment.

Strengths and limitations of this study

Realist evaluation (RE) is useful in explaining how, why and under which conditions an intervention or a social phenomenon (leadership in our study) generates a particular outcome (*in casu* public service motivation).

Continuous refinement of programme theories through RE cycles allows for a cumulative process of knowledge creation by constant shuttling across cases from theory to empirical data and back.

The time and resource constraints of the PhD research project, of which this study is a part, precludes testing and validating existing measurement scales of concepts such as PSM, perceived organisational support and organisational commitment.

Keywords : Leadership, Complex leadership, Public Service Motivation, Health workers, Basic Psychological Needs, Realist Evaluation, Morocco, Hospital, Human Resource Management

1 Introduction

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Health workers' performance has received increased attention from policy makers, scholars and global health organisations (1-3) and is recognised as an essential driver for the achievement of the sustainable development goals (4), the implementation and the scale up of effective public health sectors reforms (5-9).

8 **Motivation in the public sector**

9 In low- and middle-income countries (LMIC), poor performance of health workers is a critical barrier to quality of care and to the implementation of health policies in general (5, 10). This often stems from a lack of motivation and to negative attitudes of health workers in the provision of care (11-15).

14 The motivation of health workers is recognised as a critical determinant of the performance of health workers in public performance (2, 5, 6, 16). While staff availability, knowledge and skills are essential in health service delivery, they are not sufficient to ensure good health worker performance. This critically depends on staff motivation, and in public services specifically on their willingness to pursue public service values and work in line with the best interest of patients (16-19). This notion is encompassed by the concept of Public Service Motivation (PSM), understood as the altruistic desire of health workers to serve the common interest and to help patients and their families regardless of financial or external rewards. PSM has been shown to be key to the performance of public servants in public administration (20, 21) and in the health sector (22, 23).

24 Since 1990, public management scholars have been developing the concept of "*public service motivation*" (PSM), defined as "*an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations.*" (24). PSM involves a set of "*beliefs, values and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity, and that motivate individuals to act accordingly whenever appropriate*" (25). From this perspective, health workers can be driven by an altruistic desire to serve the public interest and the population (26-30). Research in public sector settings and in healthcare produced evidence on the positive effect of PSM on job satisfaction, reduced turn-over and individual performance, (28, 29, 31-34). Within the field of PSM, research has focused on how managers and leaders can enhance PSM among public servants (28, 35-39).

35 This perspective on the motivation offers an alternative perspective to the recent trends in health system performance management reforms inspired from New Public Management, including pay for performance and contracting out, which focuses on extrinsic motivation of health providers, and risks to crowd out intrinsic motivation (30). Such strategies may also generate negative self-interested behaviours, goal displacement and mistrust (30, 40-45).

41 **Leadership in the health sector**

42 In Morocco, research evidence points to how a lack of motivation and poor leadership of health managers may have hampered the performance of health workers, the quality of care and the scaling up of proven effective health policies (46-53) and quality assurance programmes (54, 55).

45 In LMIC, health managers often display poor leadership practices either by avoiding getting involved, delaying decisions (laissez-faire leadership) or by overemphasising top-down controlling behaviours perceived as inefficient in the motivation of health workers. (56-60)

48 'Traditional' leadership theories emphasise the transactional nature of the relationship between leaders and their employees. They comprise transactional leadership (where leaders focus on top

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3 1 down contingent rewards and sanctions) and transformational leadership (where leaders focus on
4 2 inspiring staff, infusing jobs with meaning and acting as a role model)(61). Recent leadership
5 3 theories emphasize the need for more complex approaches that allow for better adaptation to the
6 4 complex social nature of healthcare organizations (62-64). Complex leadership scholars highlight the
7 5 multi-layered nature of effective leadership, which includes information sharing, distributed
8 6 leadership and support for lower-level cadres. They define complex leadership as the ability of
9 7 leaders in complex unpredictable situations to balance between transactional, transformational and
10 8 distributed leadership so as to fit the nature of task, type of staff and organisational characteristics
11 9 (62, 63, 65-67)

10 11 **The relationship between leadership and PSM**

12 12 Complex processes underlie the effect of leadership on PSM, and they are conditioned by contextual
13 13 factors (professionalism, religion and family education) (68-74) and organisational factors
14 14 (organisational culture (75, 76) and job characteristics (28, 29)).

15 15
16 16 Most PSM research in the field of public administration relies on quantitative measures of the effect
17 17 of leadership on PSM. Little attention has been paid to the mechanisms underlying this relationship
18 18 in healthcare and public service settings (16, 31, 33, 35, 37, 39, 77-79) and the existing studies often
19 19 display methodologies challenges (80, 81). Understanding these mechanisms is valuable in the sense
20 20 that it can guide health managers in developing appropriate leadership and managerial practices
21 21 that reinforce organisational value systems, and foster health workers' PSM and intrinsic motivation,
22 22 and consequently their performance (60, 82-84).

23 23
24 24 In response, we set out to explore the causal processes through which leadership, context and
25 25 organisational attributes influence public service motivation of health workers in Moroccan
26 26 hospitals. The research questions we address are: 1) How does leadership influence public service
27 27 motivation of health workers? and 2) Which organisational or contextual conditions underlie the
28 28 effect of leadership on PSM? This study is part of a larger study on the nature and effects of
29 29 leadership practices on health workers in 4 Moroccan hospitals.

30 **Methods**

31 31 We adopted the realist evaluation (RE) approach (85). RE aims at identifying causal mechanisms that
32 32 explain how, why and under which conditions an intervention or a social phenomenon (leadership in
33 33 our study) generates a particular outcome (*in casu* PSM)(85). Realists posit that causal mechanisms
34 34 are generative in nature and embedded in a stratified social reality; they reside in the interplay
35 35 between individuals, institutional and structural factors (86, 87).

36 36
37 37 We applied the steps of the realist research cycle (86, 88) to structure our study: 1) eliciting the
38 38 initial programme theory, 2) designing the study, 3) carrying out the data collection, 4) analysing the
39 39 data and 5) synthesis. We refer to our paper reporting on a case study of leadership for more details
40 40 on the realist approach (89) in press).

41 42 ***Step 1 - Eliciting the initial programme theory***

43 43 Our scoping review of complex leadership (90) allowed us to elicit an initial programme theory (PT)
44 44 on the relationship between leadership and motivation. It was further developed through a first
45 45 exploratory case study (coded NHMH) (see Belrhiti,2019 (89) in press) and this led to the initial PT
46 46 that is the starting point of this study:
47 47

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3 1 “Complex leaders adopt an appropriate mix of transactional, transformational and distributed
4 2 leadership styles that fit the mission, goals, organisational culture, nature of the tasks of the
5 3 organisation and the individual characteristics of the personnel. This adaptation of leadership
6 4 style enhances staff perceived supervisor support and perceived organizational support, and
7 5 contributes to the satisfaction of basic psychological needs of the staff”. (Figure1)
8 6

9 7 As we described before (89), the underlying theories used to build our above mentioned programme
10 8 theory rely on two mechanisms that have shown to be important in explaining the complex
11 9 relationship between leadership and motivation (91-93): 1) the satisfaction of basic psychologic
12 10 needs, based on self-determination theory (94)(see box 1) and 2) perceived supervisor support and
13 11 perceived organisational support (91, 92, 95)(see box 2).
14 12

15 13 Box 1 Definition of Basic Psychological Needs

16 14 According to self determination theory, every individual thrive to satisfy three basic
17 15 psychological needs (autonomy, competence, relatedness). *Autonomy* corresponds
18 16 to the sense of volition and willingness ones feel when undertaking specific
19 17 behaviours. This allow staff to self endorse their actions. *Competence needs* means the
20 18 feeling self efficacy when experiencing work opportunities that allow individuals to
21 19 express and use their abilities and skills. *Relatedness* means that staff need to feel
22 20 mutual respect, consideration from others, connectedness and a sense of belonging to
23 21 a social group.
24 22

25 23 Box 2 Perceived organisational and supervisor support

26 24 Perceived Organisational Support (POS) is understood as the beliefs of
27 25 healthworkers about the extent to which the organisation (e.g. top management
28 26 teams) values their efforts and their psychological well-being.
29 27
30 28 *Perceived Supervisor Support* (PSS) is identical to the former but focuses on the
31 29 relationship between staff and their supervisor.
32 30
33 31

34 32 In this study, we adopted a dynamic perspective of leadership which we considered as a multilevel
35 33 process embedded in a multi-layered social and organisational context (63, 65, 96-100). From this
36 34 perspective, leadership is shaped by the organizational culture and by how staff interpret their
37 35 organizational context (organizational climate) (101-103).
38 36

39 37 We mean by the organisational culture “*the shared values, underlying assumptions and expectations*
40 38 *that characterise organisational membership*” (104). Different types of organisational culture are
41 39 presented in box 3 (105). The visible aspect of the organisational culture is represented by the
42 40 organisational climate (‘the tip of the iceberg’) and is “the visible behaviour of group members”
43 41 (101).
44 42

45 43 We adopt the definition of organisational climate of Bock (2005): the “*contextual situation at a point*
46 44 *in time and its link to the thoughts, feelings, and behaviours of organizational members. Thus, it is*
47 45 *temporal, subjective, and often subject to direct manipulation by people with power and influence.*”
48 46 (106). It is a multidimensional concept that includes role conflict and ambiguity, professional and
49 47 organisational esprit, job challenges, workgroup cooperation and mutual trust) (107).
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Box 3 Types of organisational culture according to Cameron and Quinn

Hierarchical culture: strong emphasis on stability, predictability and efficiency. Formalisation, procedures and rules govern individual behaviour.

Clan culture: emphasis on cohesion, teamwork, high levels of employee morale, employee involvement and commitment within an autonomy supportive environment.

Market culture: emphasis on employee productivity, results and profit orientation, individualism and competitiveness, in an environment that is considered as hostile.

Adhocratic culture: emphasis on creativity, innovation, individuality, experimentation, risk taking and adaptability. Power is decentralised to task teams.

Figure 1 shows our programme theory and the complex relationship between leadership, individual motivation and organisational characteristics (organisational culture and climate, mission and goals and degree of responsiveness to basic psychologic needs). The quality and type of staff motivation (extrinsic versus autonomous motivation, including PSM and intrinsic motivation) depends on the degree of autonomy support by leaders, and consequently their perceived supervisor support (which in itself is increased by transformational and distributed leadership and reduced by *laisser-faire* and transactional leadership). Autonomous motivation is enhanced when staff have positive levels of perceived organisational support, which depends on the degree of responsiveness of top management teams to staff's basic psychological needs and the congruence between the organisational culture and the individual values.

More specifically, we identified four causal configurations (Figure 1):

Configuration 1

- *Laisser faire* leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.

Configuration 2

- Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.

Configuration 3

- By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.

Configuration 4

- Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities.

In this study, we zoom in on the role of public service motivation. We assume that leaders who stimulate staff's awareness of the value of their work to society and its contribution to the public good may enhance PSM and intrinsic motivation. Leaders who are responsive to the basic psychological needs of their staff are likely to stimulate the internalisation of public values and may shift the locus of individual motivation from extrinsic to more autonomous forms of motivation (108). This requires a conducive organisational culture and absence of conflicts between individual and organisational values. We hypothesise that the specific attributes of the Moroccan health system, and specifically its hierarchical organisational culture, may impede the emergence of PSM.

Figure 1 Programme theories

Step 2 - Study design: a multiple embedded case study design

We adopted a multiple case study design (109) because it fits the exploration of multifaceted complex phenomena, such as PSM, in real world settings (in our case in 4 hospitals). We defined the case as the relationship between leadership and "public service motivation". We took a hospital as the unit of analysis. Purposive sampling allowed us to select hospitals that would allow us to test the programme theory. We selected hospitals representing extreme cases, displaying contrasting organisational performance and leadership practices (110, 111). To select hospitals, we used data from the Ministry of Health's quality assurance programme called "concours qualité" from 2011 to 2016 (112, 113). More specifically, we used the leadership scores and the overall organisational quality performance scores (table 1). We refer to (Sahel,2015) (55) for a discussion of the "concours qualité".

We purposefully selected two well-performing hospitals with high leadership scores (NHMH and EJMh) and two poor-performing hospitals with low leadership scores (RKMh and SMBA) (Table 1). This selection was informed by independence of cases, variation in hospitals size (seeking to have 1 large and 1 small sized hospital in each category), variation in location (urban, periurban, rural) and accessibility to the first author.

Table 1 : List of high and low-performing hospitals (Ministère de la santé du Maroc, 2011 and 2016 report)

Hospital	Size (number of beds)	Performance scores %		Leadership score (2016)
		2011	2016	
NHMH	<120	65	80.33	75.76
EJMh	>240	46	65.98	57,61
SMBA	>240	44	20.01	14.54
RKMh	<120	44	18.91	6.97

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4 1
5 2 Realist evaluation seeks to refine programme theories through a process of specification: the PT is
6 3 gradually refined by testing it in different settings or in different cases. For this study, we started the
7 4 data collection in NHMH and developed a first refined PT. This was then tested in EJMh and the
8 5 poor-performing hospitals RKMh and SMBA. The analysis of each site led to successive refinement,
9 6 confirmation or disconfirmation of the elements of the initial PT.
10 7

11 8 **Figure 2 - Cases studies and data collection, Morocco, January-June 2018**

12 9 13 10 14 11 **Step 3 - Data collection**

15 12 We based the choice of the data collection methods on our programme theory (Figure 1) to ensure
16 13 that data would allow us to test the initial PT. We used interviews, focus group discussions and
17 14 document review (see figure 2). We collected data during the period January-June 2018

18 15 **Interviews**

19 16 In each hospital, we interviewed health professionals, and senior, middle and operational managers.
20 17 We explored the antecedents of PSM, its expression and the relationship with leadership and
21 18 management practices, organisational structure, and cultural context. We used open-ended
22 19 interview guides tailored to each category of respondents (supplementary file 1). We collected data
23 20 until saturation was attained. In the first site (NHMH), we carried out 18 individual in-depth
24 21 interviews (IDI). Subsequently, we carried out 17, 16 and 17 IDI in EJMh, RKMh and SMBA
25 22 respectively. Each respondent was anonymised and given a unique identifier. Sociodemographic
26 23 characteristics of the respondents are summarised in table 2.
27 24

28 25 **Focus group discussions**

29 26 To further explore the key constructs used by interviewees in relation to “public service motivation”,
30 27 we carried out 7 focus group discussions and 8 group discussions with different cadres
31 28 (administrators, nurses and doctors). Group discussions were carried out whenever the number of
32 29 participants did not reach the appropriate size (6 to 8) to carry out focus group discussions. This was
33 30 encountered in practice in low staffed hospitals (RKMh and NHMH) particularly for doctors and
34 31 administrative staff.
35 32

36 33 This allowed us to deepen the analysis across the different categories of health workers (managers,
37 34 service providers). The first author led the FGD. Probes, follow up questions and summarised key
38 35 themes were used and verification from participants was sought at the end of each FGD (114, 115).
39 36 The FGD facilitator guide is presented in supplementary file 2.

40 37 Respondents for the in-depth interviews and the focus group discussions were identified through
41 38 qualitative purposive sampling(110). All FGD and IDI were audio recorded with the exception of 1
42 39 interview. In this specific case, we took notes and transcribed the unrecorded interview using
43 40 memory recall (116). Following guidance provided by (Miles and Huberman,2016) (117) and
44 41 (Krueger,2014) (114), we wrote a brief contact summary at the end of any contact with research
45 42 participants. It included major themes and ideas arising after each interaction. All recordings were
46 43 transcribed verbatim.Two researchers (ZB and BM) checked the transcripts for accuracy.
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Document review

We collected documents at the study sites (760 page) and at the Ministry of Health (460 page). We focused on human resources availability and skill mix, the strategic plans of the hospitals, audit documents and quality assurance reports.

Observations

The first author carried out opportunistic observations (between appointments with interviewee), following the guidance described by (118). Close attention was paid to the interaction between supervisors and staff. We recorded our observations about feelings and goals expressed during informal interaction with hospital staff and external actors and the physical spaces.

Table 2 Respondent characteristics

Managerial function

	NHMH	EJMH	RKMH	SMBA
Senior managers	4	4	3	4
Middle Managers	3	7	2	5
Line Managers	5	2	4	3
Operational staff	20	30	17	33
Total	32	43	26	45

Professional profile

	NHMH	EJMH	RKMH	SMBA
Doctors	13	14	4	14
Pharmacist	1	3	1	1
Nurses	14	15	14	20
Administrators	4	11	7	10
Total	32	43	26	45

Age category

	NHMH	EJMH	RKMH	SMBA
20-30	6	3	5	3
31-40	11	11	6	17
41-50	9	10	9	11
51-63	6	19	6	14
Total	32	43	26	45

Gender

	NHMH	EJMH	RKMH	SMBA
Female	20	25	10	24
Male	12	18	15	21
Total	32	43	26	45

1 **Step 4 - Analysis**

2 We carried out the data analysis following the ‘traditional’ analytical phases of compiling data,
3 interpreting, discussion, and drawing conclusions (111). Guided but not restricted by the initial
4 programme theory, we coded all data sources (transcripts, contact summaries and field notes) using
5 different coding techniques (concept, hypothesis and “in vivo” coding)(119). We used the ICAMO
6 (Intervention-Context-Actor-Mechanism-Outcome) heuristic to identify causal configurations. We
7 revisited the data to test conjectural ICAMO configurations (120). We adopted a retroductive
8 approach (121) to contrast patterns of leadership effectiveness between different types of actors
9 (doctors, nurses and administrators). We compared these patterns with the chronology of the CEO
10 succession periods.

11
12 NVivo 10 software (122) was used to manage the data. Milestones in the coding process were
13 discussed during research teams meetings.
14

15 **Step 5 – Synthesis**

16 When the data from all sites were analysed, we compared the ICAMO configurations with the initial
17 programme theory and modified it accordingly. We followed the RAMESES II reporting standards in
18 writing the research report and this paper (88).
19

20 **Ethical considerations**

21 The study was granted approval by the Moroccan Institutional Review Board, Rabat (n°90/16) and
22 the Institutional Review Board of ITM (N° 1204/17). We informed all interviewees before the start of
23 data collection about the study objectives, topics, type of questions and their right to refuse being
24 interviewed and to interrupt the interview at any time. This information was also provided in an
25 information sheet and reiterated before the start of interview when the written consent procedure
26 was explained. The respondents were asked to sign the informed consent form if they agreed to
27 participate in the study. The forms were co-signed by the researcher and a copy was given to
28 research participants.
29

30 **Patient and public involvement statement**

31 There was no direct patient involvement in this study.
32

33 **RESULTS**

34
35 In this section, we first present for each hospital the main leadership and management practices, the
36 perspective of staff, their views on public service motivation, and a summary. Then we present a
37 summary of the cross case analysis and the resulting refined programme theory.
38

39 **EJM Hospital**

40 **Main leadership and management practices**

41 In EJM, there were two successive leadership periods. Between 2012 and 2015, CEO 1 had a
42 transactional leadership style, relying on administrative procedures, assertion of power, and

1 compliance with rules and procedures. He was perceived by his staff as being distant and not
 2 responsive to their needs for professional autonomy. Conflicts and tensions with unions and doctors
 3 were high. He left in 2015.

4
 5 *“CEO 1 was too strict in the application of the new hospital procedures. We could not discuss
 6 the rules with him. The hospital cannot be managed by strictly following the rules. For
 7 instance, in compliance with the new procedures, CEO 1 decided to implement night shifts for
 8 administrative staff and stopped the night shifts of nursing supervisors. The administrators
 9 did not accept to carry out this task because the new procedures did not mention who should
 10 do this and how this ‘overtime’ job would be reimbursed”. EJM 3 Administrator.*

11
 12 In mid-2015, CEO 1 was replaced by CEO 2. He was upto then the chief medical officer of the
 13 hospital and had quite some management experience. For instance, he was the director of EJM
 14 between 2002 and 2006. In 2016, EJM won the first price at the quality contest. CEO 2 had an
 15 explicit vision on leadership:

16
 17 *“I had the chance to manage the hospital in 2002. This allowed me to really know the
 18 personal and vice versa. Now, we work as a team in that sense that staff are involved in
 19 decision making. This is very important. In a real world setting, participative decision making
 20 is very important, because you avoid many problems. When you involve them, you avoid
 21 resistance. If staff is involved from the beginning, they will adopt the solution and will not
 22 feel that it was imposed on them. This will be totally different if the solution was imposed on
 23 the staff. (...) When you involve staff in decision making, you build trust relationships. Trust
 24 relationships are very important in our context, where the hospital director has little power
 25 over his staff. [...] When we explain to staff well defined objectives. They know which
 26 organisational objectives to pursue. Achieving these goals at the operational level bring
 27 legitimacy to the hospital direction. It is important that health workers know that you are
 28 thriving to achieve these objectives. This is what I call credibility.” EJM 7, CEO 2*

30 The perspective of staff

32 *Leadership style*

33
 34 Our analysis shows that the staff found that the transactional leadership style of CEO 1 was
 35 incongruent with their professional values and their need for autonomy. This contributed to mistrust
 36 in the management team, low organisational commitment and a high level of tension with unions.

37
 38 *CEO 1, with whom I worked, was authoritative. This was not congruent with my values. I
 39 value participative decision making. I try to share with others, I need to be treated the same
 40 way by my superior. CEO 1 was just commanding: ‘Do this, give this to this person’. I would
 41 have accepted and engaged with him if he would have involved me in participative decision
 42 making with other members of the hospital committee, if he would have used polite
 43 inquiries, like “Would it be possible to do this?, rather than giving orders without listening to
 44 team members or involving them in decision making.” EJM 25, pharmacist.*

45
 46 The participative decision making style of CEO 2 and his consideration for individuals restored trust
 47 in the management team and reduced the tensions with the unions.

48
 49 *“Now everything works smoothly. He does things that are right. He reacts to wrong doings.
 50 He is sympathetic with all staff. CEO2 has a long experience. He knows everyone, he knows*

1
2
3 1 *their personal characters, motivation and personal needs.... He is very successful in doing*
4 2 *that! He knows how to reduce tensions between his close collaborators. He takes decisions*
5 3 *smoothly. As a physician, he is able to reduce tensions between medical union*
6 4 *representatives and internal coalitions within the medical departments. His door is open to*
7 5 *everyone. He listens to staff. He does not rush decisions. He maintains a low level of tension*
8 6 *within the hospital. He does not complicate things. The former CEO took rapid decisions and*
9 7 *was facing much resistance [...].CEO 2 involves his close collaborators and chiefs of*
10 8 *departments in decision making. This way, they adhere to his decisions. He listened to them.*
11 9 *He has a participative leadership.” EJM 25, pharmacist.*

12 ***Public Service Motivation***

13
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15
16
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18
19 14 Frontline providers said that compassion and self-sacrifice are important components of their public
20 15 service motivation.

21 16
22 17 *“While recording electrocardiographs on patients, I was constantly communicating with*
23 18 *them. Sometimes, women shared with me their feelings, their worries about their siblings,*
24 19 *their fear of death, their personal life and stories about their deceased or ill husbands. They*
25 20 *were often crying. I feel their sufferings as if I were living with them”. EJM 17, Nurse.*

26 21
27 22 We found that the intrinsic motivation of health providers is sustained by their feelings of
28 23 competence and their ability to adequately apply their professional skills and competencies.

29 24 *“I love my job. I chose deliberately to work at the emergency unit. I love working at*
30 25 *the emergency unit. I am totally engaged. Handling serious medical emergencies is*
31 26 *a motivation in itself”. EJM 38, Doctor.*

32 27 Participative decision making was perceived by staff as congruent with their professional identity
33 28 and their public service values. It enhanced their self-esteem and satisfied their needs for autonomy
34 29 and relatedness and increased their public service motivation. It also increased their perceived
35 30 autonomy support.

36 31 *“Leaders needs to be fair, listen to our needs and resolve our organizational issues. Most*
37 32 *importantly, they need to understand my professional needs, take into consideration my*
38 33 *suggestions and contributions to work. This make me feel satisfied. In contrast, with the*
39 34 *former leader, I was not feeling secured. He was exerting excessive control. I suffered the*
40 35 *martyr!. I was constantly under constant threats. I even sent an administrative*
41 36 *correspondence to the ministry of health against the unjust treatment. I was just trying to do*
42 37 *my job correctly!”. EJM 17, Nurse.*

43 **Summary**

44 40
45 41 Our analysis showed that the transactional leadership of CEO 1 did not address the basic
46 42 psychological needs of the staff and specifically the need for autonomy. This not only contributed to
47 43 low organisational commitment and reduced public service motivation, but also to tensions with
48 44 the unions.

49 45
50 46 In contrast, CEO 2 had a transformational leadership style: he effectively understood how people are
51 47 motivated, listened to them, and clearly communicated his vision and objectives to the health
52 48 workers. He showed genuine concern for the needs of his staff, effectively resolving problems

1 through a constructive dialogue with informal leaders and union representatives. He also involved
2 his close collaborators and heads of department in decision making.

3 CEO 2 also stimulated the emergence of distributed leadership to lower levels of the organisation,
4 which increased trust between the staff and the CEO, and reduced resistance to change. This was
5 considered by mid-level managers as crucial in maintaining the “public service motivation” of staff,
6 in particular given the perceived limited decision spaces they have over their personal work. We saw
7 that not only senior managers but also mid-level managers engaged in distributing leadership. For
8 the latter, participating in decision making increased their perceived leader support and satisfaction
9 of their autonomy needs. This has enhanced their autonomous motivation (intrinsic and public
10 service motivation).

11

12 *RKM Hospital*

13 **Main leadership and management practices**

14
15 This hospital has known two leadership periods since 2010. From 2010 to 2012, CEO 1 displayed
16 transactional leadership: he assiduously monitored staff attendance, planned their shifts and dealt
17 with his staff through administrative correspondence. He was confronted with staff resistance.

18
19 Because of shortage of intensive care anaesthetists, nurses anaesthetists often take over their tasks,
20 like sedating patients in the operating theatre without medical supervision. When they were
21 confronted with excessive control by the director, they stopped carrying out this “medical” task. This
22 has negatively impacted the continuity of surgical activities. In this case, nurses used their
23 professional expertise as a source for discretionary power (e.g. ability to intubate and sedate
24 patients in the operating theatre).

25
26 *“(CEO1) was suspicious and was strictly applying the regulations to correct the staff
27 absenteeism. When the cat’s away, the mice will play. There were many conflicts, especially
28 with nurse anaesthetists who did not comply with the control of attendance. As a result, they
29 stopped sedating patients and argued that they are not allowed to sedate patients without
30 an intensive medical care anaesthetist”. RKMH8, close collaborator.*

31
32 CEO2 managed the hospital between 2012 and 2018. He favoured a distant *laissez faire* leadership
33 approach and was often absent. He would then be replaced by the chief nursing officer who adopted
34 the same leadership style. The latter seemed overwhelmed by day-to-day operational management
35 responsibilities. During our field work, we noted that the management of the hospital was poor. No
36 organizational action plans were available, and there were no meetings. Strikingly, our focus group
37 discussion with nurses was the only meeting they attended in three years. We observed high level of
38 absenteeism among hospital staff.

39 40 **The perspective of staff**

41 42 *Leadership style*

43
44 Our analysis shows that the close collaborators, administrators and technical staff appreciated the
45 leadership of CEO 1, because he reduced role ambiguity and job pressure. However, nurses and
46 doctors were unhappy with his overcontrolling behaviour and engaged in resistance. Also CEO 2 was
47 appreciated by his close collaborators, now because of his gentle wording and good interpersonal

1 management. However, doctors and nurses perceived his *laissez-faire* leadership as non-responsive
 2 to their needs in terms of resources and working conditions. This had led to reduce their public
 3 service motivation by reducing their willingness to improve service delivery and to work for the
 4 common good. Some have expressed that *laissez faire* leadership has catalysed their intention to
 5 quit the public sector for good.

6
 7 *“Nowadays the strength and pace of my motivation to improve the service quality has
 8 decreased. This is essentially due to the lack of responsiveness of the hierarchy to my needs.
 9 There is no response. Even though we are engaged to improve our working conditions and
 10 the panel of services, the lack of feed back from the management teams has stopped our
 11 willingness to improve health service delivery. I found myself complaining alone. This has
 12 reduced my attraction to improve public service. This has negatively impacted my
 13 psychological well being. In all cases, I get my salary at the end of the month, however,
 14 from my personal point of view, I could not contend my self to work without thriving to
 15 improve the quality of public service at the pediatric unit. My husband is telling me that
 16 improving service delivery in the public sector is not my mission and that I am not a sort of
 17 social reformer!! I am always told that these poor working conditions are common in the
 18 public sector and I need to stop trying to work for the common good. My motivation has
 19 decreased for while now. But I hope later to I try again with the new chief provincial
 20 hospital that has recently been appointed. Maybe, he will be more responsive to our needs
 21 than the former. If in the coming three years this does not change, I will quit the public sector
 22 and start my own private practice (RKMH 16 paediatrician)*

23
 24
 25 Respondents complained management engaging in clientelism and nepotism, which they found to
 26 conflict with their public service values.

27
 28 *“The chief of the admission office is carrying out tasks that are not his. He manages the
 29 personnel! Staff who come from the town of CEO2 are privileged compared with others.
 30 Decisions are guided by his close interpersonal relationship with them”. RKMH 11, Nurse.*

31
 32 *“For instance, when I take necessary administrative measures to correct staff absenteeism,
 33 the provincial district officer takes no actions to sanction these deviant behaviours. My
 34 authority is weakened. Either you accept staff’s deviant behaviours and thus participate in
 35 this “crime”, or you are intransigent and staff will build an alliance against you and you will
 36 be demonised. As you may know, unions and political parties are corrupt, they seek only the
 37 interest of their members and not the general interest” RKMH 15, Administrator.*

38
 39 Staff perceived that they were unable to treat adequately patients because of lack of material and
 40 ressources (e.g. laboratory tests, mobile radiology, etc.) and the inadequate organisational support
 41 to their supply needs. They did not feel self-efficacious. Some felt that they were doing more harm
 42 than good for patients. This reduced their PSM and negatively impacted their psychological well
 43 being.

44
 45 *“We suffer because we transfer patients for simple technical procedures that we could have
 46 handled locally” RKMH 10, Nurse.*

47
 48 *“We often ask relatives to help us carry patients with a fractured femur to the fixed X Ray
 49 table. By doing this, we may worsen the fracture. I feel sorry when I had to ask sick patients
 50 to go themselves to the fixed X-Ray table. No organisational support is given, despite our
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 59
 60*

1
2
3 1 *relentless asking the administration to provide us with a mobile X Ray system.*"RKMH 14
4 2 Radiology technician

5 3
6 4
7 4 Poor management and bad working conditions led to low levels of perceived organisational support
8 5 amongst nurses. Staff felt inadequately supported by their supervisors and were left to face
9 6 problems in the execution of their daily tasks. This created a stressful job pressure they were unable
10 7 to deal with.

11 8
12 9
13 9 *"During the transfer (of a patient to the referral hospital), we do not focus on what care to
14 10 give to the patient, but we are stressed by the poor conditions of the ambulance. It is not an
15 11 ambulance, it is a wreck!" RKMH 12, Nurse anaesthetologist"*

16 12
17 13 Reluctance of the managers to start up legal procedures against patients or families who assaulted
18 14 nurses or doctors further reduced the latter's trust in the management.

19 15
20 16 *"Many times, staff were assaulted. The management just forgave the assaulter, because the
21 17 CEO knows him. Leaders should support staff, ... support them in a sense that if someone of
22 18 us is assaulted one day, I mean a nurse staff in his shift or a doctor, staff should be protected.
23 19 This assault should not be considered as an assault on an individual person, it is an assault on
24 20 all of us, on all health care providers cadres in general." RKMH 24, Nurse, ED.*

25 21 26 22 **Public Service Motivation**

27 23
28 24 In this hospital, we found that frontline providers value the importance of adequately serving
29 25 patients and improving health outcomes. They derive satisfaction from relieving suffering and saving
30 26 lives, or at least preventing them from developing complications. Health workers mentioned that
31 27 compassion, self-sacrifice, serving the underprivileged and caring for the poor are crucial drivers of
32 28 their public service motivation.

33 29
34 30 *"We often sacrifice our own time for the sake of patients and for the sake of God to avoid
35 31 unnecessary delays and prevent parturients from getting complications, for exemple, severe
36 32 neurological and cardiac complications of post partum haemorrhage. We even help patient's
37 33 families to pay for ambulance fees in order to avoid delays". RKMH 14, midwife*

38 34 *"Here, I work a lot with vulnerable citizens. It is a reward in itself to serve poor
39 35 patients. It is my source of motivation". RKMH 3, Doctor*

40 36
41 37 We noted that the *laisser-faire* and transactional leadership had a negative effect on staff with high
42 38 levels of public service motivation. It led to psychological distress, low organisational commitment
43 39 and self-interested behaviour. This was compounded by the perceived organisational politics (see.
44 40 clientelism and nepotism).

45 41 46 42 **Summary**

47 43
48 44 Our analysis showed that the *laisser-faire* and transactional leadership in this hospital did not
49 45 respond to the basic psychological needs of health workers. This led to reduced public service
50 46 motivation with negative consequences on their psychological well-being, because of the lack of
51 47 opportunities of experiencing valued patient outcomes (e.g saving lives).
52 48

1
2
3 1 The leadership styles also contributed to low perceived organisational support, which in a context of
4 2 perceived organisational politics, in turn lowered organisational commitment, and increased self-
5 3 interested behaviour and mistrust between administration and staff.
6 4

8 5 *SMBA Hospital*

11 6 **Main leadership and management practices**

12 7
13 8 In SMBA hospital, one of the low-performing hospitals, there were three leadership periods. CEO 1
14 9 (2007-2010) displayed strong transactional leadership, emphasising conformity with rules and
15 10 procedures and insisting on top-down hierarchal management. He carried out many performance
16 11 audits and clinical supervisions, and organised training to staff. He showed high moral standards and
17 12 was both respected and feared by staff. He was replaced in 2010 by CEO 2, who retired in 2013. He
18 13 had some experience in management, displayed transactional leadership and stressed the
19 14 conformity with rules similarly to his predecessor. In 2014, CEO 2 was replaced by CEO 3, who
20 15 adopted a *laissez-faire* leadership. The hierarchical line was no longer respected. He managed the
21 16 hospital poorly: no organisational action plans were available, and he did not carry any audit nor
22 17 supervision. No inter-units meetings were held and the departmentalisation process was halted.
23 18 During our field work, we observed a strike of the clerical officers in charge of hospital admission
24 19 and of the private company in charge of security in reaction to bad working conditions and
25 20 perceived low responsiveness of management to their needs.
26 21

29 22 **The perspective of staff**

32 24 *Leadership style*

33 25
34 26 CEO 1 and 2 were highly appreciated by the administrators and their close collaborators. The health
35 27 professionals (nurses and doctors) pointed to reduced perceived organisational support and to lack
36 28 of participative decision making. Under the leadership of CEO 3, staff felt less supported by their
37 29 supervisors. They said they were left to deal with problems alone. Lack of clarity of goals led health
38 30 workers to perceive role ambiguity and job pressure.
39 31

40 32 Poor management and low responsiveness of leaders to staff needs in terms of improving working
41 33 conditions decreased their public service motivation.
42 34

43 35 *“Leaders do not play a role in our motivation. [...]. We came to work despite constraints and*
44 36 *poor working conditions. If we were only motivated by working conditions, we wouldn’t*
45 37 *come to work. The management team was even unable to timely replace a broken window*
46 38 *of our reception desk counter!” SMBA 29, Reception desk officer*
47 39

48 40 Our respondents also mentioned the clientelism and nepotism of CEO3, who privileged some staff
49 41 and patients over others. This led to perceived organisational politics and mistrust, and contributed
50 42 to low organisational commitment, demotivation and crowding out of public service motivation.
51 43

52 44 *“In this hospital, there are some external actors who pretend to do social work, and pretend*
53 45 *to act as benefactors. These external actors, often members of associations, intervene*
54 46 *illegitimately in hospital activities. They are like parasites. They definitely impact on our*
55 47 *productivity. They are like stockbrokers. They do not care about citizens. They frequently*
56 48 *mediate between citizens and services providers. The CEO responds quickly to patients needs*

1
2
3 1 *when these actors are involved. This what I call clientelism. This is not fair! All citizens are*
4 2 *equal” SMBA 21, support straff, reception desk.*

5 3
6 4
7 4
8 5 ***Public service motivation***

9 6
10 7 Physicians and nurses perceived compassion with patients’ conditions and self sacrifice as major
11 8 components of their public service motivation.

12 9
13 10 *“Patients are important for me because I got sick myself. So, I sense what the*
14 11 *patients are feeling. My family members, my daughter and my grandmother got*
15 12 *sick. I feel the pain patients are suffering from. I can feel their suffering.”(SMBA 35,*
16 13 *Nurse).*

17 14
18 15 Public service motivation is also driven religious cultural beliefs including elements of fear of God
19 16 and divine rewards.

20 17
21 18 *“We work because of our sense of humanity, our own consciousness and our fear of God.*
22 19 *One day, we will be asked about the quality of work we have done in the past. We feel sorry*
23 20 *for patients, SMBA 29, reception desk officer”*

24 21
25 22 Staff said they were suffering from psychological distress due to poor working conditions, and
26 23 experienced feelings of guilt because of their inability to perform their job adequately and to ease
27 24 their patients suffering. Lack of opportunities to experience positive patients outcomes reduced
28 25 their public service motivation.

29 26
30 27 *“When you do not have necessary material you are in trouble! It is not only a constraint but a*
31 28 *source of suffering. Instead of relieving patients’ distress, it is us who get stressed.” SMBA 45,*
32 29 *Doctor.*

33 30
34 31 *«Here, ressources are limited compared to the teaching hospital where we were trained.*
35 32 *Real world practices are really differnet. When we first were assigned to this hospital we*
36 33 *could not change things around. This is really depressing. We have the ability to provide*
37 34 *specialised care but we do not have the necessary ressources to do it ! , SMBA 42, Doctor.*

38 35
39 36 This impacted negatively on their perceived organisational support. This led to crowding out of their
40 37 public service motivation and lowered their organisational commitment and their well-being.

41 38
42 39 *“It is really depressing. I do not want to work anymore because I do not have the necessary*
43 40 *ressources.[...] I often cry when I watch newborns suffering from intramuscular injections*
44 41 *because nurses are not skilled to administrater intraveineus infusions to newborns and often*
45 42 *use instead intramuscular injection for 10 days. I am not only frustrated, I hate entering*
46 43 *neonatology service!!!. I only grudgingly go see my patients whereas in the past I loved*
47 44 *providing neonatology care. I cannot stand seeing newborn almost dying of hypoglycaemia*
48 45 *0.3g/l because they are not adequately fed. This is due to the acute shortage of nurses (one*
49 46 *nurse per shift) who are unable to reconciliate between administering antibiotics and*
50 47 *treating infections and baby feeding. I am not anymore motivated to cure newborns*
51 48 *‘infections but I am terribly stressed avoiding newborns to die from hypoglycaemia. If babies*
52 49 *are left alone with the feeding bottles they may die by suffocation. How can we come*
53 50 *motivated to work in the next morning? of course not!!! SMBA 42, paediatrician.*

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3 1 Shortage of material reduced their ability to properly care for patients, which reduced their PSM and
4 2 contributed to a reduced sense of competency, self-efficacy and autonomy.
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6 4 *"During my pediatric residency, I practiced neonatology and neonatal reanimation for two*
7 5 *years, I developed many skills that I am not using now because I do not have the necessary*
8 6 *equipments. I have only few neonatal resuscitation tables and two sources of oxygen for 21*
9 7 *patients. I do not have a respirator. During my training I learned to intubate and manage*
10 8 *cardiorespiratory distress. Now, in neonatology service instead of using unavailable syringe*
11 9 *pumps, we manage pediatric diabetes by intravenous perfusion. I never been thought to do*
12 10 *this!!". SMBA 42, paediatrician.*
13 11

14 12 *"I am very proud to serve my population, however I am truly unsatisfied. We have strong*
15 13 *faith and we work eagerly to serve people. But our faith is not sufficient. We need more*
16 14 *ressources. For exemple, I am often called for patients with cranial trauma. We do what is*
17 15 *possible depending on available ressources. Cerebral trauma patients need an emergency*
18 16 *cerebral CT-scan and the golden hour must be respected. When they arrive at the hospital,*
19 17 *often with a delay, the CT Scan is unavailable. It is often out of order. What could we do? In*
20 18 *this case, We help teams transfer the patient to the nearby hospital in Marrakech. We often*
21 19 *collect money to pay ambulance fuel and to avoid extradelays. I feel that my contribution to*
22 20 *patient health is useless, despite being present for about 5 or 6 six hours at night. I feel that*
23 21 *our contribution is hampered by organisational problems that are beyond our control".*
24 22 *SMBA 43, intensive care anaesthetist*
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24 Summary

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26 In this hospital, we found that leaders (like CEO 1) who are perceived as showing a high sense of
27 moral and ethical standards, and who stimulate the awareness of staff of public service values and
28 their contribution to society, were positively considered by some cadres. For the administrative
29 staff, the transactional leadership displayed by CEO 1 led to higher clarity of goals, reduced job
30 pressure and increased extrinsic motivation. However, it was negatively perceived by frontline
31 workers because they felt it did not respond to their needs for autonomy.
32

33 *Laisser faire* leadership crowded out public service motivation by reducing frontline healthworkers'
34 opportunities to help. Such management did not respond to the basic psychological needs of staff
35 and led to low organisational commitment.
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37 In Table 3, we present a summary of the perspectives of staff on the leadership and management
38 practices. We present in the first column key summary data derived from the initial exploratory case
39 study (NHMH hospital) and detailed in (Belrhiti,2019(89) in press) .
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Table 3 - The perspectives of staff on the leadership and management practices

NHMH	EJMH	RKMH	SMBA
<p>CEO 1 (2007-2013) <i>Transactional leadership</i> Conformity to rules and procedures, role model. Improved staff working conditions. Staff perspective Strong perceived leader support, which catalysed the quality culture</p> <p>CEO 2 (2014-2016) <i>Transformational leadership</i> Clear communication of his vision. Genuine concern for staff needs. Enhanced staff mission valence. Distributed leadership Stimulated network formation, "kind heart actions" Staff perspective Responsiveness to their basic psychological needs Reinforced existing clan culture. Positive organisational climate (mutual trust and team work). This led to increased organisational commitment and extra role performance, In 2016, the hospital won the second price in the national quality contest).</p>	<p>CEO 1 (2012-2015) <i>Transactional leadership</i> Power-assertive attitude. Overemphasis on compliance with rules and procedures Staff perspective Perceived distant leader. Low perceived autonomy support. Decreased organisational commitment. Mistrust, conflicts and tensions with unions.</p> <p>CEO 2 (2015-2018) <i>Transformational leadership</i> Good communication of vision and objectives. Genuine concern for the needs of staff. Distributed leadership Constructive dialogue to resolve professional issues. Catalysing role of mid-level managers. Participative decision making. In 2016, the hospital won the first price of the quality contest. Staff perspective High perceived autonomy support. Good congruence with professional and public service motives. Trust relationship between staff and management team. Reduced tensions with unions.</p>	<p>CEO (2010-2012) <i>Transactional leadership</i> Strict application of administrative procedures Staff perspective Appreciated by administrators and close collaborators. Increased extrinsic motivation of staff. Nurses and doctors resisting to his overcontrolling behaviour engaging in conflicts and strikes.</p> <p>CEO2 (2012- 2018) <i>Laisser faire leadership</i> Often absent. Chief Nursing officer overwhelmed by day to day operational management duties. Staff perspective Appreciated by administrators and close collaborators. Nurses and doctors unhappy about lack of responsiveness to their needs and the poor working conditions. Conflictual organisational climate, characterised by high job pressure and role ambiguity. Perceived organisational politics (nepotism and clientelism), contributing to perceived unfairness.</p>	<p>CEO 1 (2007-2010) <i>Transactional leadership</i> Enforcement of hierarchy. Emphasis on conformity with rules and procedures. Audit and clinical supervision. High moral standards. Staff perspective Highly appreciated by close collaborators and administrative staff. Nurses and doctors perceived a lack of participative decision-making and reduced perceived autonomy support.</p> <p>CEO 2 (2010-2013) <i>Transactional leadership</i> Enforcing conformity with rules and regulations. Close supervision, administrative sanctions. Staff perspective Well appreciated by administrators and close collaborators Perceived unresponsiveness to nurses' needs.</p> <p>CEO 3 (2014-2018) <i>Laisser faire leadership</i> Hierarchical line not respected. No meetings, no clinical supervision. No inter-unit interaction. Staff perspective Decreased organisational commitment</p>

<p>1 2 3 4 CEO 3 (July 2016-Sep 2017): Laisser faire leadership 5 6 Passive attitude. Reliance on administrative 7 correspondence. 8 Poor communication with staff. Hierchical line 9 not enforced 10 Staff perspective 11 Role ambiguity, high job stressors. 12 Unresponsiveness to staff needs. Deteriorating 13 working conditions. Perceived organisational 14 politics. Demotivation, conflicts and tensions 15 with unions. 16 17 CEO 4 (Oct 2017-March 2018): 18 Transactional leadership 19 Reinforcing the hierachical line. Building 20 alliance with informal leaders. 21 Staff perspective 22 Distant leader. 23 Reduced perceived autonomy support. 24 Improved working conditions. 25 Claryfing goals reduced role ambiguity and job 26 pressures for admin. staff 27 Reduced interaction between health units. 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46</p>			<p>Inadequate woking conditions and supply of consumables. Low perceive organisational support. High role ambiguity and job pressure. High level of perceived organisational politics.</p>
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Cross case analysis and refined causal configurations

Comparing the initial programme theory with the results of the analysis of the data from the hospitals EJMh, RKMh and SMBA allowed us to refine it (table 4). We used the Intervention-Context-Actor-Mechanism-Outcome (ICAMO) configuration to structure the analysis (120). We confirmed or refuted the four causal configurations presented above.

ICAMO configuration 1: *Laisser faire* leadership and PSM

This configuration was confirmed in the RKMh and SMBA hospitals (See table 4 and figure 3).

Laisser faire leadership [I] decreases intrinsic motivation and public service motivation [O] of health providers [A] by being less responsive to the basic psychological needs of autonomy, competence and relatedness [M] and by reducing perceived organisational support [M] in situations of reduced opportunities to experience positive patient outcomes [C].

Laisser faire leadership [I] contributes to mistrust between administration and staff, resistance to change and tensions with unions [O] by inducing perceived job pressure and role ambiguity [M] for health providers [A].

Laisser faire leadership [I] reduces public service motivation [O] in a context of perceived organisational politics (clientelism and nepotism) [C] by being incongruent with individual public service values [M] of all cadres [A].

Figure 3 - *Laisser-faire* leadership and PSM (ICAMO 1)

ICAMO configuration 2 - Transactional leadership and PSM

This configuration is confirmed by empirical data from the three hospitals (EJMh, RKMh, SMBA). As a result, we retain ICAMO 2 as follows (see figure 4):

If transactional leadership ensures adequate support and working conditions of administrative staff [I] or if enforces a clear hierarchical line [I], it can reduce job pressure [M] and reduce role conflict [M] and thus increase the extrinsic motivation of administrative staff [O] and the level of organisational commitment [O]. If transactional leaders [I] are felt by health professionals [A] to be distant, this can reduce perceived autonomy support and reduce the satisfaction of the need for mutual respect (relatedness) [M], leading in turn to reduced motivation [O] and low organisational commitment [O].

Figure 4 Transactional leadership-PSM (ICAMO 2)

ICAMO configuration 3: Transformational leadership and PSM

Configuration 3 is confirmed only in EJMh hospital (Table 4 and figure 5).

Transformational leadership understood as inspiring staff (walking the talk), infusing jobs with public service values and showing individual consideration to staff [I] increases public service motivation [O] by responding to basic psychological needs of autonomy and relatedness [M] of all staff [A] and contributes to higher organisational commitment and expressed mutual trust between staff with administration [O].

Figure 5 Transformational leadership and PSM (ICAMO 3)

ICAMO configuration 4: Distributed leadership and PSM

Distributed leadership was observed only in the high performing hospitals EJMh and NHMH (see figure 6).

Distributed leadership in the sense of creating a supportive and open climate and good relations between staff [I] increased staff public service motivation [O] and organisational commitment [O] and led to extra role behaviours by satisfying staff basic psychological needs [M] and increasing trust in management teams [M].

Figure 6 Distributed leadership and PSM (ICAMO4)

As described in table 3 and 4, we noticed that only CEO2 in NHMH and CEO2 in EJMh displayed complex leadership understood as the balancing between transactional, transformational and distributed leadership that fits best the diversity of professional profiles, the nature of the tasks and the organisational culture. Transactional leadership fits the administrators who value role clarity and reduced job ambiguity, whereas transformational and distributed leadership addresses the basic psychological needs of health providers. The other CEOs either adopted a transactional leadership style or laissez faire leadership, which was not well received by a majority of staff.

The four ICAMOs presented above allowed us to refine our initial programme theory:

Complex leaders, applying an appropriate mix of transactional, transformational and distributed leadership styles that fit organisational and individuals characteristics [I] can increase public service motivation, organisational commitment and extra role behaviours [O] by increasing perceived supervisor support and perceived organizational support and satisfying staff basic psychological needs [M], if the organisational culture is conducive and in the absence of perceived organisational politics [C].

Table 4 Testing the initial configurations in the study sites

Programme theories based on literature review and the study of NHMH Hospital	EJM Hospital	RKM Hospital	SMBA Hospital
Laissez faire leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.	Not confirmed not refuted.	Confirmed and refined: <i>Laissez faire</i> leadership decreases the levels of [...]. contributes to general malaise, mistrust between administration and staff and decreases public service motivation and psychological well being. This mechanism is triggered by the lack of opportunities for experiencing positive patient outcomes and the perceived organisational politics	Confirmed.
Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.	Confirmed and refined. Transactional leaders are effective on staff extrinsic motivation leading in turn to reduced motivation” and low organisational commitment and tension with unions.	Confirmed	Confirmed
By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.	Confirmed	Not confirmed nor refuted, because no transformational leadership was enacted in this hospital.	Not confirmed nor refuted because no transformational leadership was enacted in this hospital
Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding	Confirmed	Not confirmed nor refuted, because no distributed leadership was enacted in RKM.	Not confirmed nor refuted because no distributed

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them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities			leadership was enacted in SMBA.
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For peer review only

Discussion

In this study, we explored mechanisms and contextual conditions by and in which leadership influences “public service motivation” of health workers.

Our study shows, in line with leadership literature (123, 124), that *laissez faire* leadership decreases intrinsic motivation and public service motivation of all cadres by being less responsive to the basic psychological needs of autonomy, competence and relatedness of staff and by reducing perceived organisational support (1, 5, 94).

Our findings suggest that *transactional* leadership, when it ensures adequate managerial support and improvement of working conditions, can enhance the extrinsic motivation of staff by reducing role ambiguity and job pressure, and by increasing perceived organisational support. This is supported by other studies (125-128). However, we also found indications that *transactional* leadership can crowd out intrinsic motivation and public service motivation of health workers by reducing the satisfaction of their needs for autonomy. This is supported by other studies in LMIC (40, 41, 129-131).

We found *transformational* leaders who clearly communicate their vision and walk the talk, infuse jobs with public services meaning, and show individual consideration can enhance PSM by responding to their need for relatedness. This is supported by recent studies, for instance (29, 57, 76, 79, 132-136). Transactional leadership can lead to higher organisational commitment and extra role behaviours (137, 138).

Distributed leadership facilitated teamwork, information flows, and team cohesion. It nurtured feelings of connectedness, enhancing the perception of autonomy support and perceived organisational support. This led to creative problems solving, collective learning and better performance at the quality assurance contest, in ways similarly to other study findings (11-15, 139).

Our study supports the hypothesis that the effect of leadership on PSM depends on the degree of responsiveness to basic psychological needs (autonomy, competency and relatedness). This points to the relevance of self-determination theory (94, 108) as a middle range theory that may frame how individual psychological mechanisms underlie the effects of leadership on staff motivation (extrinsic motivation, intrinsic motivation and PSM). It also supports the hypothesis that the effect of leadership on PSM is conditioned by the existence of a conducive organisational culture (a clan culture and absence of perceived organisational politics). This is explained by value congruence, understood as the degree of congruence between individual and organisational values, which represents a major mechanism in the integration of public service values in individual behaviours (71, 140-142).

In summary, in healthcare organisations, leaders able to adapt their leadership practices to the nature of individuals and organisational characteristics (complex leaders) are likely to be more effective. They foster networking and connections between staff by distributing leadership responsibilities and reinforcing the role of middle managers, infusing jobs with meaning and creating constructive dialogues with professional health workers (12, 90, 143-146).

Study contributions, validity and limitations

This study contributed to fill the gap in leadership studies in general (84, 147, 148) and in healthcare specifically (63, 149) by unravelling the underlying mechanisms of leadership effects on health

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3 1 workers' motivation. It contributes to the study of leadership in North African muslim countries, a
4 2 neglected field of research (150).
5 3

6 4 This study contributes to the case that realist evaluation can contribute to building a better
7 5 understanding of complex phenomena in health systems (86). Realist evaluation proved an
8 6 appropriate approach to unravell the relationship between leadership and PSM, and thus
9 7 responded to calls of PSM scholars for robust research methodologies (33, 35, 37, 77-79).
10 8

11 9 The Realist Evaluation (RE) proved to be a suitable approach for capturing the multilevel dynamic
12 10 nature that evolved over time and across contexts. RE facilitated the unveiling of causal
13 11 mechanisms (value congruence and satisfaction of basic psychological needs) and the contingent
14 12 effect of contextual factors (organisational culture, climate and perceived organisational politics)
15 13 and the individual reasoning of different social actors (e.g. perceived supervisor and organisational
16 14 support) (86, 151, 152).
17 15

18 16 By using ICAMO configurational analysis, we were able to provide evidence on the contextual
19 17 nature and social construction of leadership. Adopting a situational approach on leadership help
20 18 overcome the inconsistency of findings when studying leadership effectiveness in organisations(153-
21 19 155)
22 20

23 21 In addition, the qualitative multiple embedded case study design proved appropriate in providing
24 22 qualitative design rich, dynamic, contextual data with a focus on mechanisms rather than
25 23 variables(156). Qualitative approaches are complex sensitive and allow for more research flexibility
26 24 in unveiling the mechanisms and conditions underlying complex social phenomena in general and
27 25 more specifically leadership effectiveness in health (90, 100, 157-165)
28 26
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30 28 The validity of our study findings derive from theoretical guidance in study design, sampling and
31 29 analysis and cross-validation (166-168) and theoretical replication across cases (121). Theoretical
32 30 replication allows for a retroductive process of knowledge creation (121) by constantly shuttling
33 31 from theory to empirical data and by continuously refining our programme theories across negative
34 32 and positive cases.
35 33

36 34 There are limitations to our study. The causal configurations developed here are the most plausible
37 35 explanation for the outcomes observed in our study, but may likely not be the unique explanation.
38 36 Further empirical testing in a larger set of cases would enable to further refine the programme
39 37 theories. A second limitation is that we did not quantitatively measure public service motivation,
40 38 organisational commitment, perceived organisational support and other variables. The time and
41 39 resource limits of the PhD study , of which the study presented here is part, precluded testing and
42 40 validating existing scales for these constructs.
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45 43 **Implications for practice**

46 44

47 45 In Morocco, similarly to other low- and middle-income countries (57), the hierarchical culture within
48 46 the Ministry of Health favours transactional leadership styles (50, 169) and this may impede the
49 47 emergence of PSM (170-172). We raise some concerns in relation to the actual health reforms carried
50 48 out in Morocco, which are inspired by New Public Management (e.g. performance-based
51 49 management, contracting out and public-private partnerships) and which may have negative
52 50 consequences on health workers performance by facilitating the practice of transactional leadership,
53 51 focusing on extrinsic rewards (and sanctions) and crowding out the expression of PSM and self-

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3 1 altruistic behaviours of frontline health workers. Policy makers should stimulate the development of
4 2 complex leadership competencies (e.g. fostering network building, generative sense making, see also
5 3 (90) in their capacity building programs.
6 4

8 5 **Conclusion**

9 6
10 7 In the context of health care organisations, the motivation of health workers relies on individual,
11 8 organisational and contextual antecedents. The effectiveness of leaders depends on the degree of
12 9 responsiveness to the basic psychological needs of health workers and on value congruence
13 10 between organisational and individual values. Leaders should learn how to adapt their leadership
14 11 practices to the organisational characteristics (nature of task, mission valence) and to type of
15 12 motivation of health workers (extrinsic versus intrinsic and PSM). Further research is needed to
16 13 explore the role of value congruence and to understand how the social institutions (i.e. religion,
17 14 family education, professionalism) may shape the expression of public service motivation of health
18 15 workers in low and middle income countries.
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26 21 **List of Figures :**

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35 29 **Abbreviations :**

36 30	CEO : Chief Executive Officer
37 31	CQ : "Concours Qualité"
38 32	FGD : Focus Group Discussion
39 33	ICAMO : Intervention, Context, Actor, Mechanism, Outcome.
40 34	IDI : In-depth Interview
41 35	ITM : Institute of Tropical Medicine
42 36	LMIC : Low -and Middle-Income Countries
43 37	PHO : Provincial Health Officer
44 38	PSM : Public Service Motivation
45 39	RE : Realist Evaluation

53 40 **Declarations :**

56 42 **Ethics approval and consent to participate**

57 43 The research protocol was approved by the Moroccan Institutional Review Board (n°90/16) of
58 44 the Faculty of Medicine of Pharmacy, Rabat and the Institutional Review Board of the Institute of
59 45 Tropical Medicine, Antwerp (n° 1204/17). All participants have been informed prior to the conduct

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3 1 of the research and written consent forms were signed by the respondents and countersigned by the
4 2 researcher. A signed copy was given to each respondents.

5
6 3 **Consent for publication** : « Not Applicable »

7 4
8
9 5 **Availability of data and material** : « Data sharing not applicable as no datasets generated and/or
10 6 analysed for this study»

11 7
12
13 8 **Competing interests**

14 9 The authors declare that they have no competing interests.

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20 15
21 16 **Authors contributions**

22 17 All the four authors (ZB, BM, WVD,AB) contributed to the original design and analysis and writing of
23 18 the manuscript. ZB carried out the data collection. BM cross checked the transcripts. Initial coding
24 19 was done by ZB and discussed between the research team members(BM,WVD,AB). ZB edited the
25 20 final draft. All authors read and approved the final manuscript..

26 21
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31 26
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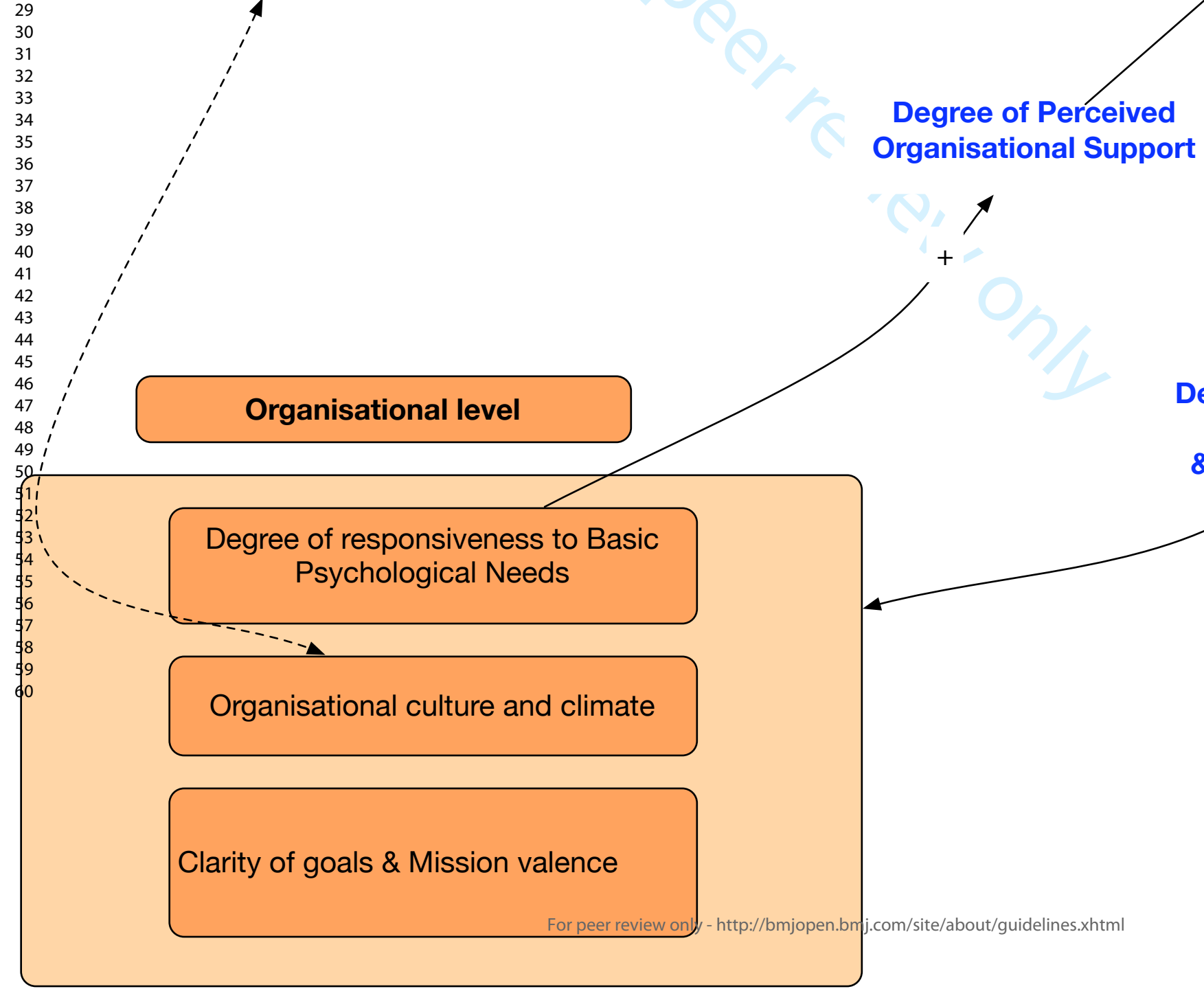
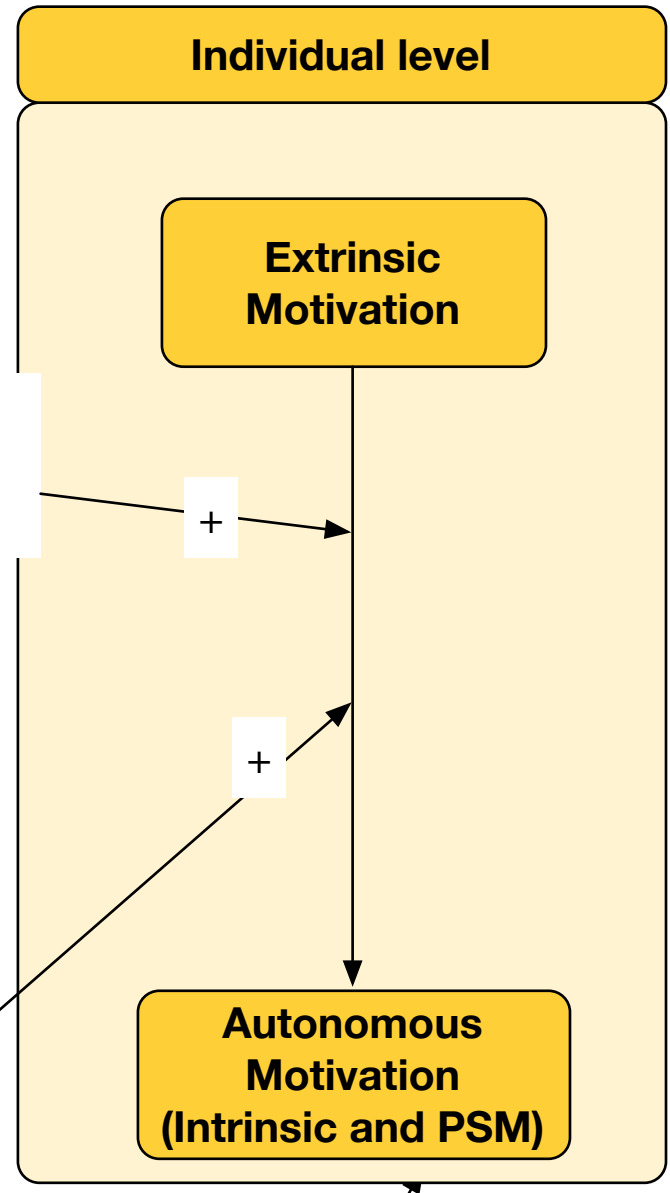
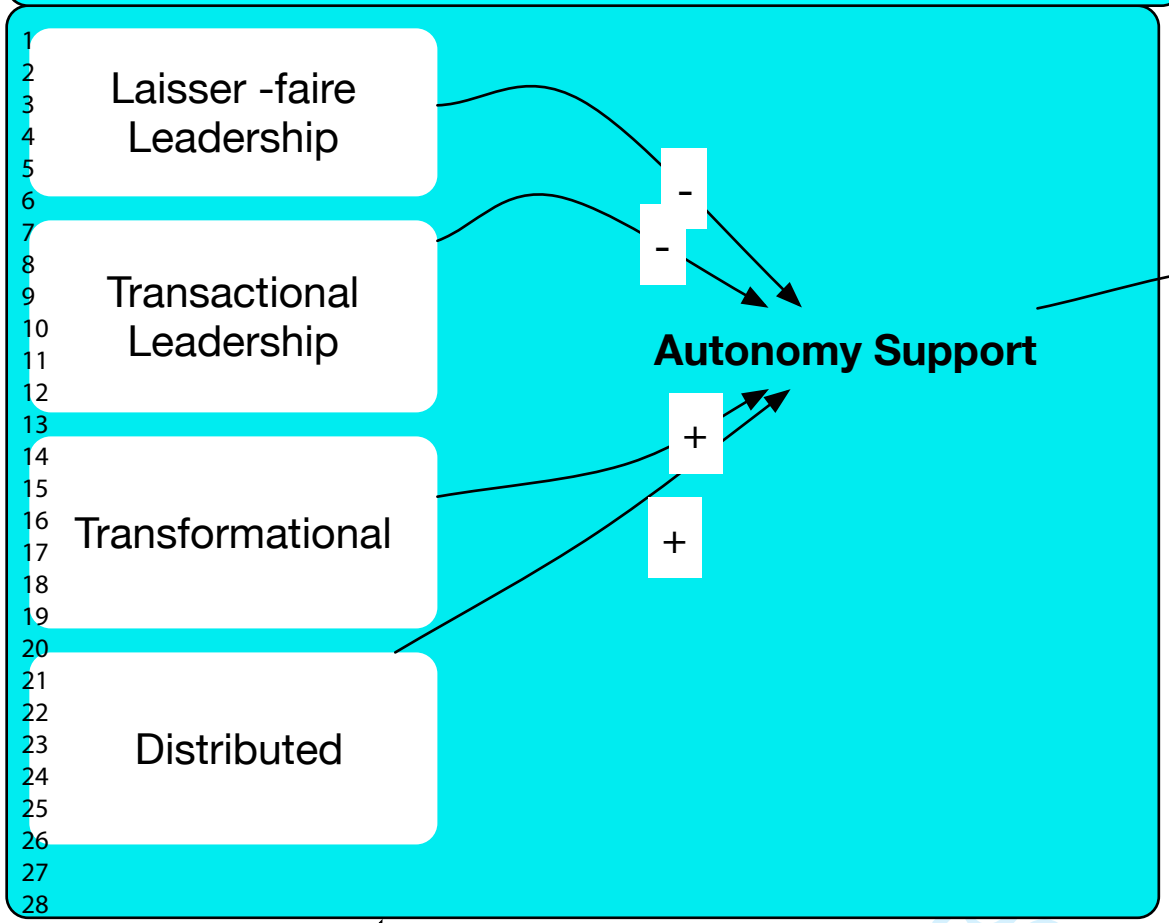
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37 35 *service. The International Journal of Human Resource Management.* 2004;15(6):978-95.
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Leadership practices



Degree of congruence Organisational & Individual motives

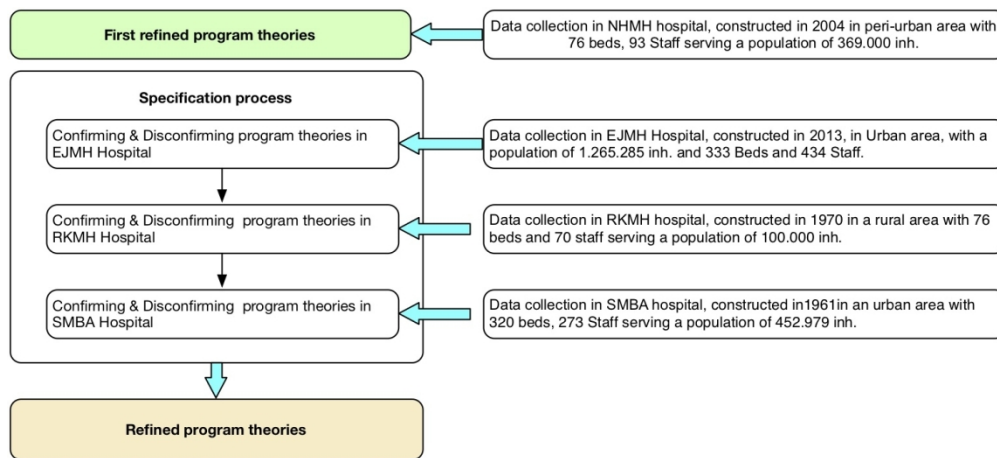


Figure 2 - Cases studies and data collection, Morocco, January-June 2018

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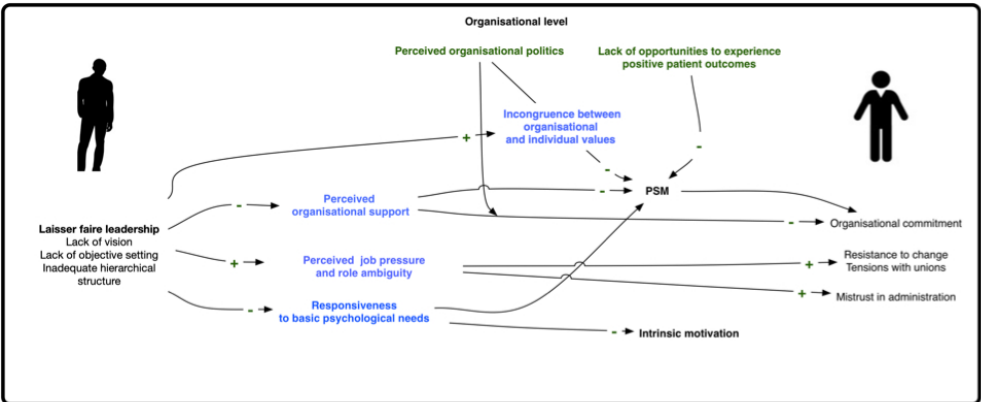


Figure 3 - Laissez-faire leadership and PSM (ICAMO 1)

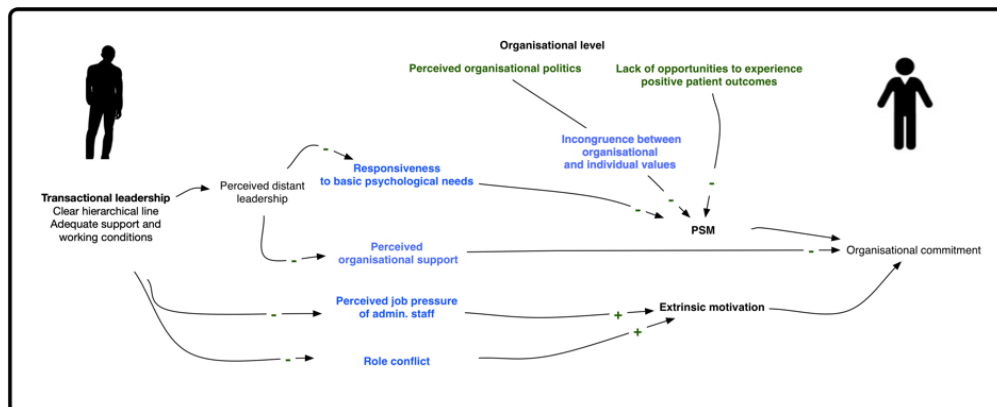


Figure 4 - Transactional leadership-PSM (ICAMO 2)

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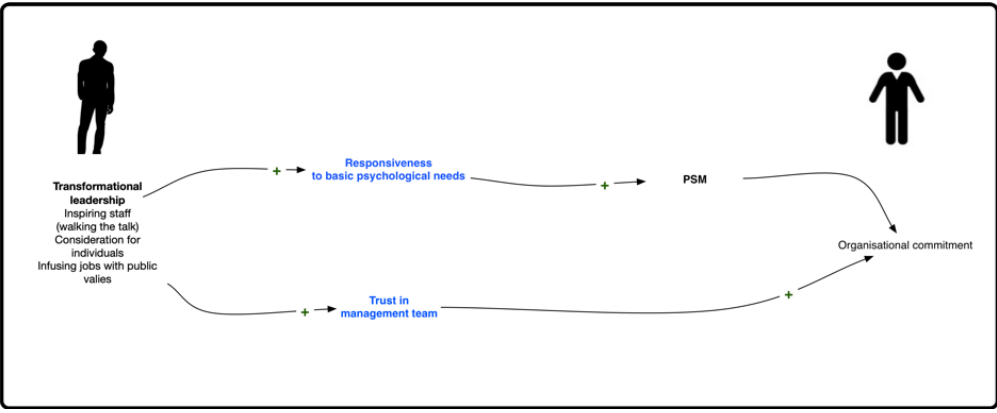


Figure 5 - Transformational leadership and PSM (ICAMO 3)

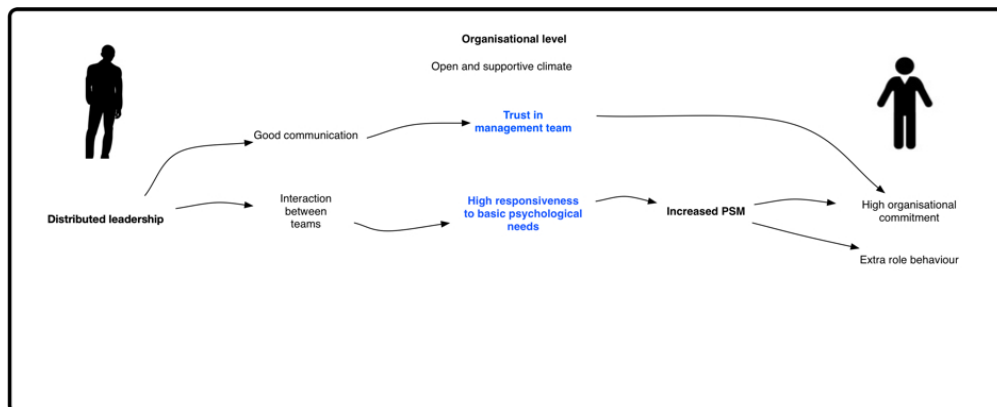


Figure 6 Distributed leadership and PSM (ICAMO4)

Supplementary file 1 Open ended interview

This interview topic guide gives an indication of the main questions that will be asked in the interviews of health service managers and providers. Core questions were adapted to meet the specificity of each category (senior managers (Questions 1 to 4), intermediate managers (Questions 1 to 5); health professional (Questions 2 to 5)).

Components	Objectives/Remarks / Questions
Introduction	Researcher presentation (Name, qualification, institution)
	Interview objectives
	Explain the procedure (Time, Clarification questions, information about voluntary participation and the autonomy to respond or not to sensitive question and information about consent forms)
	Explain confidentiality and data anonymisation procedures
	Ask permission to record the interview (Audio record and notes)
	Obtain informed consent
Adjust the recording device	Make sure that equipment is functioning and the room is not noisy
General part	To get overall idea about the interviewee and make him/ her comfortable
	Q : How old are you ?
	Q : Could you describe your actual job position? Your tasks?
	Q : How long have you been working in your actual position?
	Q : How long have you been working in this hospital?
	Q : Where have you worked before? In which function?
Introduction to specific questions	Transition to core questions
1) Leadership Practices	Q : Could you describe you task?
	Q : Could you describe your role as a manager? P
	Q : What is your vision about leadership? What do a good leader means to you?
	Q : Would you give me some examples of your practice of leadership?
	Q : What challenges are you confronted with in you leadership practice ?
	Q : In your opinion, how could you describe your influence on staff behaviours ?
2)Hospital Performance	Q : In your opinion, what explain the good/bad performance of your hospital in "Concours Qualité" ?
	Q : Is it related to leadership? Does leadership matters?
3) Individual Performance	Q : In your opinion, what are the major reasons why a health professional is performant in health care provision?
	Q : According to you, what are he facilitators to individual performance?

	Q : In your opinion, what are the barriers to maintain a good individual performance for health professionals ?.
	Q : Is there a difference in the motivation between different cadres of health professionals or not?
	Q : How could you play a role in the motivation of your staff/ colleagues?
4) Public Service Motivation	Q : Could you explain what motivates you to work in this hospital ? (Motivation intrinsic/extrinsic)
	Q : how do you feel working in this hospital?
	Q : What attaches you to this hospitals, if any? Q: how do you describe this attachment?
	Q : serving citizens, what does it means for you?
	Q : Did you think about quitting the public service? If yes, why? If no, why?
	Q : Do you feel that you are doing tasks that go beyond your responsibilities, or not?
	Q : how could you describe you engagement about the organisational mission and vision?
	Q : Do you feel that you have the necessary information, tools and support to carry on your task, or not?
	Q : Do you engage in supplementary efforts without contingent financial rewards ? Could you give me some examples?
5) Leadership in your organisation	Q : Could you describe leadership practices in your organisations?
	Q : Do you feel that you are supported by your superior ? By management teams?
	Q : Could you provide some examples of leadership practices of your superior?
	Q : how could you describe relation between your interaction with your leader and your motivation?
Summary and debriefing	During this interview you gave me useful informations that are relevant to this study.
	Q : Is there something that you see as important regarding our topic we did not mention? If Yes we could discuss it. We do have time.
	Q: Do you have questions for me?

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For peer review only

Supplementary file 2 Focus Group Discussion Guide (senior managers)

themes	Questions	Prompts, clarifications, vignettes
Motivation	<p>Q 1 : What motivates at work at this hospital?</p> <p>Q 2 : How do you feel at work at the hospital?</p>	
Public service motivation	<p>Q2 : Why did you choose to the work at the public sector?</p> <p>You told me about your (de) motivation in the public sector? Could you explain your (de) motivation?</p>	
	<p>Q3 : Serving citizen, what does it mean to you ?</p> <p>Give me examples from your professional experience?</p>	
	<p>Q 4 : Did you think about quitting the public service? If Yes why? If no why not?</p>	<p>Vignette 1 Mr or Dr Rachid work in this hospital for 10 years, he did not leave the public hospital to work in the private sector because he feel satisfied with the help he is providing to the local underprivileged population What do you think about Dr /Mr Rachid perspective?</p>
	<p>Q 5 : Do that you are well paid according to your contribution to this hospital? If Yes why? If no why ?</p>	<p>Vignette 2 : Dr/Mr Rachid a has accompanied many patients in medical transfers although he is not well remunerated. he continues to do it when asked. What do you think about his attitude ?</p>
Leadership	<p>Q6 : in your opinion, what does it mean a good leader?</p> <p>Q 7 : How could you describe the leadership of your supervisors?</p> <p>Q 8 : Does managers' leadership matters for you to be performant at work?</p>	<p>Vignette 3 :A manager told me that leadership is important in the motivation of staff. Do you agree with that. ?</p> <p>Do you agree that leadership play a role in the staff performance?</p>
Interaction Leadership-Motivation	<p>Q 9 : How would you describe your the relationship between your interaction with the leader an your motivation ?</p>	
Organisational performance	<p>Q : According to you, what explains the good/bad performance of your hospitals in "Concours Qualité"?</p>	<p>Who was involved? Who took leadership roles? Who was responsible for decision making?</p>
	<p>Q : What makes you perform well/bad under the leadership of Mr/Mme ?</p>	

Page 47 of 47	Table 1 List of items	Content to be reported in realist evaluation (Wong, 2016)	Y/N/Unclear	Page(s) in document	
1					
2	1	Title	In the title, identify the document as a realist evaluation	Y	Page 1 L 1
3					
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13	2	Summary or Abstract	Journal articles will usually require an abstract, while reports and other forms of publication will usually benefit from a short summary. The abstract or summary should include brief details on: the policy, programme or initiative under evaluation; programme setting; purpose of the evaluation; evaluation question(s) and/or objective(s); evaluation strategy; data collection, documentation and analysis methods; key findings and conclusions Where journals require it and the nature of the study is appropriate, brief details of respondents to the evaluation and recruitment and sampling processes may also be included Sufficient detail should be provided to identify that a realist approach was used and that realist programme theory was developed and/or refined	Y Y Y	Page 2 L 1 -47
14					
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25		INTRODUCTION			
26	3	Rationale for evaluation	Explain the purpose of the evaluation and the implications for its focus and design	Y	P 4 L 18 -29
27					
28	4	Programme theory	Describe the initial programme theory (or theories) that underpin the programme, policy or initiative	Y	P 4 Line 42 to Page -7 line 20 and Figure 1
29					
30	5	Evaluation questions, objectives and focus	State the evaluation question(s) and specify the objectives for the evaluation. Describe whether and how the programme theory was used to define the scope and focus of the evaluation	Y	P 4 L 24-29
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32					
33	6	Ethical approval	State whether the realist evaluation required and has gained ethical approval from the relevant authorities, providing details as appropriate. If ethical approval was deemed unnecessary, explain why	Y	P 10 L 14-22
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36		METHODS			
37	7	Rationale for using realist evaluation	Explain why a realist evaluation approach was chosen and (if relevant) adapted	Y	P 4 L 31-35
38					
39	8	Environment surrounding the evaluation	Describe the environment in which the evaluation took place	Y	P 8 L 1 to 5 and Table 1/figure 2
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42	9	Describe the programme policy, initiative or product evaluated	Provide relevant details on the programme, policy or initiative evaluated	Y	P 7 L 9-16, Figure 1 and Page 4 L 24-29
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47	10	Describe and justify the evaluation design	A description and justification of the evaluation design (i.e. the account of what was planned, done and why) should be included, at least in summary form or as an appendix, in the document which presents the main findings. If this is not done, the omission should be justified and a reference or link to the evaluation design given. It may also be useful to publish or make freely available (e.g. online on a website) any original evaluation design document or protocol, where they exist	Y	P 4 L 31 36 and P 7 Line 21_37
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53	11	Data collection methods	Describe and justify the data collection methods – which ones were used, why and how they fed into developing, supporting, refuting or refining programme theory Provide details of the steps taken to enhance the trustworthiness of data collection and documentation	Y	P 8 L 10-47 to P 9 L 1 TO 12 and table 2
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57	12	Recruitment process and sampling strategy	Describe how respondents to the evaluation were recruited or engaged and how the sample contributed to the development, support, refutation or refinement of programme theory	Y	Table 2 P 9 and data collection and p 7 l 21 to 36 (see above)
58					
59					
60	13	Data analysis	Describe in detail how data were analysed. This section should include information on the constructs that were identified, the process of analysis, how the programme theory was further developed, supported, refuted and refined, and (where relevant) how analysis changed as the evaluation unfolded	Y	P 9 L 13-18 and P 10 L 1 to 8
		RESULTS			
14		Details of participants	Report (if applicable) who took part in the evaluation, the details of the data they provided and how the data was used to develop, support, refute or refine programme theory	Y	Table 2 P 9 and data collection see above
15		Main findings	Present the key findings, linking them to contexts, mechanisms and outcome configurations. Show how they were used to further develop, test or refine the programme theory	Y	Result Section P 10 and Table 3 and 4
		DISCUSSION			
16		Summary of findings	Summarise the main findings with attention to the evaluation questions, purpose of the evaluation, programme theory and intended audience	Y	P 24 L 7 to 29
17		Strengths, limitations and future directions	Discuss both the strengths of the evaluation and its limitations. These should include (but need not be limited to): (1) consideration of all the steps in the evaluation processes; and (2) comment on the adequacy, trustworthiness and value of the explanatory insights which emerged In many evaluations, there will be an expectation to provide guidance on future directions for the programme, policy or initiative, its implementation and/or design. The particular implications arising from the realist nature of the findings should be reflected in these discussions	Y	P 24 L 48
18		Comparison with existing literature	Where appropriate, compare and contrast the evaluation’s findings with the existing literature on similar programmes, policies or initiatives	Y	P24 L 7 to 46
19		Conclusion and recommendations	List the main conclusions that are justified by the analyses of the data. If appropriate, offer recommendations consistent with a realist approach	Y	P 25 l 45 -51 and P 26 L1-15
20		Funding and conflict of interest	State the funding source (if any) for the evaluation, the role played by the funder (if any) and any conflicts of interests of the evaluators	Y	P 27 l 10 to 16

BMJ Open

The effect of leadership on public service motivation: A multiple embedded case study in Morocco

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Keywords:	Human resource management < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Leadership, Public Service Motivation, Complex leadership, Basic Psychological Needs, Health workers

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4 1 **The effect of leadership on public service motivation: A multiple**
5 2 **embedded case study in Morocco**
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8 4 Zakaria Belrhiti^{1,2,3}, Wim Van Damme^{2,3}, Abdelmounim Belalia¹, Bruno Marchal²
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Abstract

Objectives: We aimed at exploring the underlying mechanisms and contextual conditions by which leadership may influence “public service motivation” of health providers in Moroccan hospitals.

Design: We used the realist evaluation (RE) approach in the following steps : eliciting the initial programme theory, designing the study, carrying out the data collection, doing the data analysis and synthesis. In practice, we adopted a multiple embedded case study design.

Settings: We used purposive sampling to select hospitals representing extreme cases displaying contrasting leadership practices and organisational performance scores using data from the Ministry of Health quality assurance programs from 2011 to 2016.

Participants: We carried out on average 17 individual in-depth interviews in 4 hospitals as well as 7 focus group discussions and 8 group discussions with different cadres (administrators, nurses and doctors). We collected relevant documents (e.g. performance audit, human resource availability, etc.) and carried out observations.

Results: Comparing the Intervention-Context-Actor-Mechanism-Outcome configurations across the hospitals allowed us to confirm and refine our following programme theory: *“Complex leaders, applying an appropriate mix of transactional, transformational and distributed leadership styles that fit organisational and individuals characteristics [I] can increase public service motivation, organisational commitment and extra role behaviours [O] by increasing perceived supervisor support and perceived organizational support and satisfying staff basic psychological needs [M], if the organisational culture is conducive and in the absence of perceived organisational politics [C]”.*

Conclusions: In hospitals, the archetype of complex professional bureaucracies, leaders need to be able to balance between different leadership styles according to the staff’s profile, the nature of tasks and the organisational culture if they want to enhance public service motivation, intrinsic motivation and organisational commitment.

Strengths and limitations of this study

Realist evaluation (RE) is useful in explaining how, why and under which conditions an intervention or a social phenomenon (leadership in our study) generates a particular outcome (*in casu* public service motivation).

Continuous refinement of programme theories through RE cycles allows for a cumulative process of knowledge creation by constant shuttling across cases from theory to empirical data and back.

The time and resource constraints of the PhD research project, of which this study is a part, precludes testing and validating existing measurement scales of concepts such as PSM, perceived organisational support and organisational commitment.

Keywords : Leadership, Complex leadership, Public Service Motivation, Health workers, Basic Psychological Needs, Realist Evaluation, Morocco, Hospital, Human Resource Management

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Health workers' performance has received increased attention from policy makers, scholars and global health organisations (1-3) and is recognised as an essential driver for the achievement of the sustainable development goals (4), the implementation and the scale up of effective public health sectors reforms (5-9).

8 **Motivation in the public sector**

In low- and middle-income countries (LMIC), poor performance of health workers is a critical barrier to quality of care and to the implementation of health policies in general (5, 10). This often stems from a lack of motivation and to negative attitudes of health workers in the provision of care (11-15).

The motivation of health workers is recognised as a critical determinant of the performance of health workers in public performance (2, 5, 6, 16). While staff availability, knowledge and skills are essential in health service delivery, they are not sufficient to ensure good health worker performance. This critically depends on staff motivation, and in public services specifically on their willingness to pursue public service values and work in line with the best interest of patients (16-19). This notion is encompassed by the concept of Public Service Motivation (PSM), understood as the altruistic desire of health workers to serve the common interest and to help patients and their families regardless of financial or external rewards. PSM has been shown to be key to the performance of public servants in public administration (20, 21) and in the health sector (22, 23).

Since 1990, public management scholars have been developing the concept of "*public service motivation*" (PSM), defined as "*an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations.*" (24). PSM involves a set of "*beliefs, values and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity, and that motivate individuals to act accordingly whenever appropriate*" (25). From this perspective, health workers can be driven by an altruistic desire to serve the public interest and the population (26-30). Research in public sector settings and in healthcare produced evidence on the positive effect of PSM on job satisfaction, reduced turn-over and individual performance, (28, 29, 31-34). Within the field of PSM, research has focused on how managers and leaders can enhance PSM among public servants (35-39).

This perspective on the motivation offers an alternative perspective to the recent trends in health system performance management reforms inspired from New Public Management, including pay for performance and contracting out, which focuses on extrinsic motivation of health providers, and risks to crowd out intrinsic motivation (30). Such strategies may also generate negative self-interested behaviours, goal displacement and mistrust (30, 40-44).

41 **Leadership in the health sector**

In Morocco, research evidence points to how a lack of motivation and poor leadership of health managers may have hampered the performance of health workers, the quality of care and the scaling up of proven effective health policies (45-52) and quality assurance programmes (53, 54).

In LMIC, health managers often display poor leadership practices either by avoiding getting involved, delaying decisions (*laissez-faire* leadership) or by overemphasising top-down controlling behaviours perceived as inefficient in the motivation of health workers. (55-59)

'Traditional' leadership theories emphasise the importance of individual leadership and leader-employee exchange relationships. They comprise transactional leadership (where leaders focus on

1 top down contingent rewards and sanctions) and transformational leadership (where leaders focus
2 on inspiring staff, infusing jobs with meaning and acting as a role model)(60). Recent leadership
3 theories emphasize the need for more complex approaches that allow for better adaptation to the
4 complex social nature of healthcare organizations (61-63). Complex leadership scholars highlight the
5 multi-layered nature of effective leadership, which includes information sharing, distributed
6 leadership and support for lower-level cadres. They define complex leadership as the ability of
7 leaders in complex unpredictable situations to balance between transactional, transformational and
8 distributed leadership so as to fit the nature of task, type of staff and organisational characteristics
9 (61, 62, 64-66)

11 **The relationship between leadership and PSM**

12 Complex processes underlie the effect of leadership on PSM, and they are conditioned by contextual
13 factors (professionalism, religion and family education) (67-73) and organisational factors
14 (organisational culture (74, 75) and job characteristics (28, 29)).

16 Most PSM research in the field of public administration relies on quantitative measures of the effect
17 of leadership on PSM. Little attention has been paid to the mechanisms underlying this relationship
18 in healthcare and public service settings (16, 31, 33, 35, 37, 39, 76-78) and the existing studies often
19 display methodologies challenges (79, 80). Understanding these mechanisms is valuable in the sense
20 that it can guide health managers in developing appropriate leadership and managerial practices
21 that reinforce organisational value systems, and foster health workers' PSM and intrinsic motivation,
22 and consequently their performance (59, 81-83).

24 In response, we set out to explore the causal processes through which leadership, context and
25 organisational attributes influence public service motivation of health workers in Moroccan
26 hospitals. The research questions we address are: 1) How does leadership influence public service
27 motivation of health workers? and 2) Which organisational or contextual conditions underlie the
28 effect of leadership on PSM? This study is part of a larger study on the nature and effects of
29 leadership practices on health workers in 4 Moroccan hospitals.

30 **Methods**

31 We adopted the realist evaluation (RE) approach (84). RE aims at identifying causal mechanisms that
32 explain how, why and under which conditions an intervention or a social phenomenon (leadership in
33 our study) generates a particular outcome (*in casu* PSM)(84). Realists posit that causal mechanisms
34 are generative in nature and embedded in a stratified social reality; they reside in the interplay
35 between individuals, institutional and structural factors (85, 86).

37 We applied the steps of the realist research cycle (85, 87) to structure our study: 1) eliciting the
38 initial programme theory, 2) designing the study, 3) carrying out the data collection, 4) analysing the
39 data and 5) synthesis. We refer to our paper reporting on a case study of leadership for more details
40 on the realist approach (88) in press).

42 ***Step 1 - Eliciting the initial programme theory***

43 Our scoping review of complex leadership (89) allowed us to elicit an initial programme theory (PT)
44 on the relationship between leadership and motivation. It was further developed through a first
45 exploratory case study (coded NHMH) (see Belrhiti,2019 (88) in press) and this led to the initial PT
46 that is the starting point of this study:
47

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3 1 “Complex leaders adopt an appropriate mix of transactional, transformational and distributed
4 2 leadership styles that fit the mission, goals, organisational culture, nature of the tasks of the
5 3 organisation and the individual characteristics of the personnel. This adaptation of leadership
6 4 style enhances staff perceived supervisor support and perceived organizational support, and
7 5 contributes to the satisfaction of basic psychological needs of the staff”. (Figure1)
8 6

9 7 As we described before (88), the underlying theories used to build our above mentioned programme
10 8 theory rely on two mechanisms that have shown to be important in explaining the complex
11 9 relationship between leadership and motivation (90-92): 1) the satisfaction of basic psychologic
12 10 needs, based on self-determination theory (93)(see box 1) and 2) perceived supervisor support and
13 11 perceived organisational support (90, 91, 94)(see box 2).
14 12

15 13 Box 1 Definition of Basic Psychological Needs

16 14
17 15 According to self determination theory, every individual thrive to satisfy three basic
18 16 psychological needs (autonomy, competence, relatedness). *Autonomy* corresponds
19 17 to the sense of volition and willingness ones feel when undertaking specific
20 18 behaviours. This allow staff to self endorse their actions. *Competence needs* means the
21 19 feeling self efficacy when experiencing work opportunities that allow individuals to
22 20 express and use their abilities and skills. *Relatedness* means that staff need to feel
23 21 mutual respect, consideration from others, connectedness and a sense of belonging to
24 22 a social group.
25 23

26 24 Box 2 Perceived organisational and supervisor support

27 25
28 26 Perceived Organisational Support (POS) is understood as the beliefs of
29 27 healthworkers about the extent to which the organisation (e.g. top management
30 28 teams) values their efforts and their psychological well-being.
31 29
32 30 *Perceived Supervisor Support* (PSS) is identical to the former but focuses on the
33 31 relationship between staff and their supervisor.
34 32
35 33

36 34
37 35 In this study, we adopted a dynamic perspective of leadership which we considered as a multilevel
38 36 process embedded in a multi-layered social and organisational context (62, 64, 95-99). From this
39 37 perspective, leadership is shaped by the organizational culture and by how staff interpret their
40 38 organizational context (organizational climate) (100-102).
41 39

42 40 We mean by the organisational culture “*the shared values, underlying assumptions and expectations*
43 41 *that characterise organisational membership*” (103). Different types of organisational culture are
44 42 presented in box 3 (104). The visible aspect of the organisational culture is represented by the
45 43 organisational climate (‘the tip of the iceberg’) and is “the visible behaviour of group members”
46 44 (100).
47 45

48 46 We adopt the definition of organisational climate of Bock (2005): the “*contextual situation at a point*
49 47 *in time and its link to the thoughts, feelings, and behaviours of organizational members. Thus, it is*
50 48 *temporal, subjective, and often subject to direct manipulation by people with power and influence.*”
51 49 (105). It is a multidimensional concept that includes role conflict and ambiguity, professional and
52 50 organisational esprit, job challenges, workgroup cooperation and mutual trust) (106).
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Box 3 Types of organisational culture according to Cameron and Quinn

Hierarchical culture: strong emphasis on stability, predictability and efficiency. Formalisation, procedures and rules govern individual behaviour.

Clan culture: emphasis on cohesion, teamwork, high levels of employee morale, employee involvement and commitment within an autonomy supportive environment.

Market culture: emphasis on employee productivity, results and profit orientation, individualism and competitiveness, in an environment that is considered as hostile.

Adhocratic culture: emphasis on creativity, innovation, individuality, experimentation, risk taking and adaptability. Power is decentralised to task teams.

Figure 1 shows our programme theory and the complex relationship between leadership, individual motivation and organisational characteristics (organisational culture and climate, mission and goals and degree of responsiveness to basic psychologic needs)(88). The quality and type of staff motivation (extrinsic versus autonomous motivation, including PSM and intrinsic motivation) depends on the degree of autonomy support by leaders, and consequently their perceived supervisor support (which in itself is increased by transformational and distributed leadership and reduced by *laissez-faire* and transactional leadership). Autonomous motivation is enhanced when staff have positive levels of perceived organisational support, which depends on the degree of responsiveness of top management teams to staff's basic psychological needs and the congruence between the organisational culture and the individual values.

More specifically, we identified four causal configurations (Figure 1):

Configuration 1

- *Laissez faire* leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.

Configuration 2

- Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.

Configuration 3

- By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.

Configuration 4

- Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities.

In this study, we zoom in on the role of public service motivation. We assume that leaders who stimulate staff's awareness of the value of their work to society and its contribution to the public good may enhance PSM and intrinsic motivation. Leaders who are responsive to the basic psychological needs of their staff are likely to stimulate the internalisation of public values and may shift the locus of individual motivation from extrinsic to more autonomous forms of motivation (107). This requires a conducive organisational culture and absence of conflicts between individual and organisational values. We hypothesise that the specific attributes of the Moroccan health system, and specifically its hierarchical organisational culture, may impede the emergence of PSM.

Figure 1 Programme theories

Step 2 - Study design: a multiple embedded case study design

We adopted a multiple case study design (108) because it fits the exploration of multifaceted complex phenomena, such as PSM, in real world settings (in our case in 4 hospitals). We defined the case as the relationship between leadership and "public service motivation". We took a hospital as the unit of analysis. Purposive sampling allowed us to select hospitals that would allow us to test the programme theory. We selected hospitals representing extreme cases, displaying contrasting organisational performance and leadership practices (109, 110). To select hospitals, we used data from the Ministry of Health's quality assurance programme called "concours qualité" from 2011 to 2016 (111, 112). More specifically, we used the leadership scores and the overall organisational quality performance scores (table 1). We refer to (Sahel,2015) (54) for a discussion of the "concours qualité".

We purposefully selected two well-performing hospitals with high leadership scores (NHMH and EJMh) and two poor-performing hospitals with low leadership scores (RKMh and SMBA) (Table 1). This selection was informed by independence of cases, variation in hospitals size (seeking to have 1 large and 1 small sized hospital in each category), variation in location (urban, periurban, rural) and accessibility to the first author.

Table 1 : List of high and low-performing hospitals (Ministère de la santé du Maroc, 2011 and 2016 report)

Hospital	Size (number of beds)	Performance scores %		Leadership score (2016)
		2011	2016	
NHMH	<120	65	80.33	75.76
EJMh	>240	46	65.98	57,61
SMBA	>240	44	20.01	14.54
RKMh	<120	44	18.91	6.97

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3
4 1
5 2 Realist evaluation seeks to refine programme theories through a process of specification: the PT is
6 3 gradually refined by testing it in different settings or in different cases. For this study, we started the
7 4 data collection in NHMH and developed a first refined PT. This was then tested in EJMh and the
8 5 poor-performing hospitals RKMh and SMBA. The analysis of each site led to successive refinement,
9 6 confirmation or disconfirmation of the elements of the initial PT.
10 7

11 8 **Figure 2 - Cases studies and data collection, Morocco, January-June 2018**

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18 11 ***Step 3 - Data collection***

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20
21 12 We based the choice of the data collection methods on our programme theory (Figure 1) to ensure
22 13 that data would allow us to test the initial PT. We used interviews, focus group discussions and
23 14 document review (see figure 2). We collected data during the period January-June 2018

24 15 **Interviews**

25
26 16 In each hospital, we interviewed health professionals, and senior, middle and operational managers.
27 17 We explored the antecedents of PSM, its expression and the relationship with leadership and
28 18 management practices, organisational structure, and cultural context. We used open-ended
29 19 interview guides tailored to each category of respondents (supplementary file 1). We collected data
30 20 until saturation was attained. In the first site (NHMH), we carried out 18 individual in-depth
31 21 interviews (IDI). Subsequently, we carried out 17, 16 and 17 IDI in EJMh, RKMh and SMBA
32 22 respectively. Each respondent was anonymised and given a unique identifier. Sociodemographic
33 23 characteristics of the respondents are summarised in table 2.
34
35 24

36 25 **Focus group discussions**

37
38 26 To further explore the key constructs used by interviewees in relation to “public service motivation”,
39 27 we carried out 7 focus group discussions and 8 group discussions with different cadres
40 28 (administrators, nurses and doctors). Group discussions were carried out whenever the number of
41 29 participants did not reach the appropriate size (6 to 8) to carry out focus group discussions. This was
42 30 encountered in practice in low staffed hospitals (RKMh and NHMH) particularly for doctors and
43 31 administrative staff.
44
45 32

46 33 This allowed us to deepen the analysis across the different categories of health workers (managers,
47 34 service providers). The first author led the FGD. Probes, follow up questions and summarised key
48 35 themes were used and verification from participants was sought at the end of each FGD (113, 114).
49 36 The FGD facilitator guide is presented in supplementary file 2.

50
51 37 Respondents for the in-depth interviews and the focus group discussions were identified through
52 38 qualitative purposive sampling(109). All FGD and IDI were audio recorded with the exception of 1
53 39 interview. In this specific case, we took notes and transcribed the unrecorded interview using
54 40 memory recall (115). Following guidance provided by (Miles and Huberman,2016) (116) and
55 41 (Krueger,2014) (113), we wrote a brief contact summary at the end of any contact with research
56 42 participants. It included major themes and ideas arising after each interaction. All recordings were
57 43 transcribed verbatim.Two researchers (ZB and BM) checked the transcripts for accuracy.
58 44
59
60

Document review

We collected documents at the study sites (760 page) and at the Ministry of Health (460 page). We focused on human resources availability and skill mix, the strategic plans of the hospitals, audit documents and quality assurance reports.

Observations

The first author carried out opportunistic observations (between appointments with interviewee), following the guidance described by (117). Close attention was paid to the interaction between supervisors and staff. We recorded our observations about feelings and goals expressed during informal interaction with hospital staff and external actors and the physical spaces.

Table 2 Respondent characteristics

Managerial function

	NHMH	EJMH	RKMH	SMBA
Senior managers	4	4	3	4
Middle Managers	3	7	2	5
Line Managers	5	2	4	3
Operational staff	20	30	17	33
Total	32	43	26	45

Professional profile

	NHMH	EJMH	RKMH	SMBA
Doctors	13	14	4	14
Pharmacist	1	3	1	1
Nurses	14	15	14	20
Administrators	4	11	7	10
Total	32	43	26	45

Age category

	NHMH	EJMH	RKMH	SMBA
20-30	6	3	5	3
31-40	11	11	6	17
41-50	9	10	9	11
51-63	6	19	6	14
Total	32	43	26	45

Gender

	NHMH	EJMH	RKMH	SMBA
Female	20	25	10	24
Male	12	18	15	21
Total	32	43	26	45

1 **Step 4 - Analysis**

2 We carried out the data analysis following the ‘traditional’ analytical phases of compiling data,
3 interpreting, discussion, and drawing conclusions (110). Guided but not restricted by the initial
4 programme theory, we coded all data sources (transcripts, contact summaries and field notes) using
5 different coding techniques (concept, hypothesis and “in vivo” coding)(118) (see supplementary file
6 3). We used the ICAMO (Intervention-Context-Actor-Mechanism-Outcome) heuristic to identify
7 causal configurations. We revisited the data to test conjectural ICAMO configurations (119). We
8 adopted a retroductive approach (120) to contrast patterns of leadership effectiveness between
9 different types of actors (doctors, nurses and administrators). We compared these patterns with the
10 chronology of the CEO succession periods. Guided by our research question, we focused on
11 leadership effects on ‘public service motivation’ that emerged as a natural motivational driver of
12 Moroccan public health workers(121).

13
14 NVivo 10 software (122) was used to manage the data. Milestones in the coding process were
15 discussed during research teams meetings.

17 **Step 5 – Synthesis**

18 When the data from all sites were analysed, we compared the ICAMO configurations with the initial
19 programme theory and modified it accordingly. We followed the RAMESES II reporting standards in
20 writing the research report and this paper (87).

22 **Ethical considerations**

23 The study was granted approval by the Moroccan Institutional Review Board, Rabat (n°90/16) and
24 the Institutional Review Board of ITM (N° 1204/17). We informed all interviewees before the start of
25 data collection about the study objectives, topics, type of questions and their right to refuse being
26 interviewed and to interrupt the interview at any time. This information was also provided in an
27 information sheet and reiterated before the start of interview when the written consent procedure
28 was explained. The respondents were asked to sign the informed consent form if they agreed to
29 participate in the study. The forms were co-signed by the researcher and a copy was given to
30 research participants.

32 **Patient and public involvement statement**

33 There was no direct patient involvement in this study.

35 **RESULTS**

36
37 In this section, we first present for each hospital the main leadership and management practices, the
38 perspective of staff, their views on public service motivation, and a summary. Then we present a
39 summary of the cross case analysis and the resulting refined programme theory.

1 *EJM Hospital*

2 **Main leadership and management practices**

3 In EJM, there were two successive leadership periods. Between 2012 and 2015, CEO 1 had a
4 transactional leadership style, relying on administrative procedures, assertion of power, and
5 compliance with rules and procedures. He was perceived by his staff as being distant and not
6 responsive to their needs for professional autonomy. Conflicts and tensions with unions and doctors
7 were high. He left in 2015.

8
9 *“CEO 1 was too strict in the application of the new hospital procedures. We could not discuss
10 the rules with him. The hospital cannot be managed by strictly following the rules. For
11 instance, in compliance with the new procedures, CEO 1 decided to implement night shifts for
12 administrative staff and stopped the night shifts of nursing supervisors. The administrators
13 did not accept to carry out this task because the new procedures did not mention who should
14 do this and how this ‘overtime’ job would be reimbursed”. EJM 3 Administrator.*

15
16 In mid-2015, CEO 1 was replaced by CEO 2. He was upto then the chief medical officer of the
17 hospital and had quite some management experience. For instance, he was the director of EJM
18 between 2002 and 2006. In 2016, EJM won the first prize at the quality contest. CEO 2 had an
19 explicit vision on leadership:

20
21 *“I had the chance to manage the hospital in 2002. This allowed me to really know the
22 personal and vice versa. Now, we work as a team in that sense that staff are involved in
23 decision making. This is very important. In a real world setting, participative decision making
24 is very important, because you avoid many problems. When you involve them, you avoid
25 resistance. If staff is involved from the beginning, they will adopt the solution and will not
26 feel that it was imposed on them. This will be totally different if the solution was imposed on
27 the staff. (...) When you involve staff in decision making, you build trust relationships. Trust
28 relationships are very important in our context, where the hospital director has little power
29 over his staff. [...] When we explain to staff well defined objectives. They know which
30 organisational objectives to pursue. Achieving these goals at the operational level bring
31 legitimacy to the hospital direction. It is important that health workers know that you are
32 thriving to achieve these objectives. This is what I call credibility.” EJM 7, CEO 2*

34 **The perspective of staff**

36 *Leadership style*

37
38 Our analysis shows that the staff found that the transactional leadership style of CEO 1 was
39 incongruent with their professional values and their need for autonomy. This contributed to mistrust
40 in the management team, low organisational commitment and a high level of tension with unions.

41
42 *CEO 1, with whom I worked, was authoritative. This was not congruent with my values. I
43 value participative decision making. I try to share with others, I need to be treated the same
44 way by my superior. CEO 1 was just commanding: ‘Do this, give this to this person’. I would
45 have accepted and engaged with him if he would have involved me in participative decision
46 making with other members of the hospital committee, if he would have used polite
47 inquiries, like “Would it be possible to do this?, rather than giving orders without listening to
48 team members or involving them in decision making.” EJM 25, pharmacist.*

The participative decision making style of CEO 2 and his consideration for individuals restored trust in the management team and reduced the tensions with the unions.

“Now everything works smoothly. He does things that are right. He reacts to wrong doings. He is sympathetic with all staff. CEO2 has a long experience. He knows everyone, he knows their personal characters, motivation and personal needs.... He is very successful in doing that! He knows how to reduce tensions between his close collaborators. He takes decisions smoothly. As a physician, he is able to reduce tensions between medical union representatives and internal coalitions within the medical departments. His door is open to everyone. He listens to staff. He does not rush decisions. He maintains a low level of tension within the hospital. He does not complicate things. The former CEO took rapid decisions and was facing much resistance [...].CEO 2 involves his close collaborators and chiefs of departments in decision making. This way, they adhere to his decisions. He listened to them. He has a participative leadership.” EJM 25, pharmacist.

Public Service Motivation

Frontline providers said that compassion and self-sacrifice are important components of their public service motivation.

“While recording electrocardiographs on patients, I was constantly communicating with them. Sometimes, women shared with me their feelings, their worries about their siblings, their fear of death, their personal life and stories about their deceased or ill husbands. They were often crying. I feel their sufferings as if I were living with them”. EJM 17, Nurse.

We found that the intrinsic motivation of health providers is sustained by their feelings of competence and their ability to adequately apply their professional skills and competencies.

“I love my job. I chose deliberately to work at the emergency unit. I love working at the emergency unit. I am totally engaged. Handling serious medical emergencies is a motivation in itself”. EJM 38, Doctor.

Participative decision making was perceived by staff as congruent with their professional identity and their public service values. It enhanced their self-esteem and satisfied their needs for autonomy and relatedness and increased their public service motivation. It also increased their perceived autonomy support.

“Leaders needs to be fair, listen to our needs and resolve our organizational issues. Most importantly, they need to understand my professional needs, take into consideration my suggestions and contributions to work. This make me feel satisfied. In contrast, with the former leader, I was not feeling secured. He was exerting excessive control. I suffered the martyr!. I was constantly under constant threats. I even sent an administrative correspondence to the ministry of health against the unjust treatment. I was just trying to do my job correctly!”. EJM 17, Nurse.

Summary

1
2
3 1 Our analysis showed that the transactional leadership of CEO 1 did not address the basic
4 2 psychological needs of the staff and specifically the need for autonomy. This not only contributed to
5 3 low organisational commitment and reduced public service motivation, but also to tensions with
6 4 the unions.

8 5 In contrast, CEO 2 had a transformational leadership style: he effectively understood how people are
9 6 motivated, listened to them, and clearly communicated his vision and objectives to the health
10 7 workers. He showed genuine concern for the needs of his staff, effectively resolving problems
11 8 through a constructive dialogue with informal leaders and union representatives. He also involved
12 9 his close collaborators and heads of department in decision making.

14 10 CEO 2 also stimulated the emergence of distributed leadership to lower levels of the organisation,
15 11 which increased trust between the staff and the CEO, and reduced resistance to change. This was
16 12 considered by mid-level managers as crucial in maintaining the “public service motivation” of staff,
17 13 in particular given the perceived limited decision spaces they have over their personal work. We saw
18 14 that not only senior managers but also mid-level managers engaged in distributing leadership. For
19 15 the latter, participating in decision making increased their perceived leader support and satisfaction
20 16 of their autonomy needs. This has enhanced their autonomous motivation (intrinsic and public
21 17 service motivation).

25 19 *RKM Hospital*

28 20 **Main leadership and management practices**

30 22 This hospital has known two leadership periods since 2010. From 2010 to 2012, CEO 1 displayed
31 23 transactional leadership: he assiduously monitored staff attendance, planned their shifts and dealt
32 24 with his staff through administrative correspondence. He was confronted with staff resistance.

34 26 Because of shortage of intensive care anaesthetists, nurses anaesthetists often take over their tasks,
35 27 like sedating patients in the operating theatre without medical supervision. When they were
36 28 confronted with excessive control by the director, they stopped carrying out this “medical” task. This
37 29 has negatively impacted the continuity of surgical activities. In this case, nurses used their
38 30 professional expertise as a source for discretionary power (e.g. ability to intubate and sedate
39 31 patients in the operating theatre).

42 33 *“(CEO1) was suspicious and was strictly applying the regulations to correct the staff
43 34 absenteeism. When the cat’s away, the mice will play. There were many conflicts, especially
44 35 with nurse anaesthetists who did not comply with the control of attendance. As a result, they
45 36 stopped sedating patients and argued that they are not allowed to sedate patients without
46 37 an intensive medical care anaesthetist”. RKMH8, close collaborator.*

49 39 CEO2 managed the hospital between 2012 and 2018. He favoured a distant *laissez faire* leadership
50 40 approach and was often absent. He would then be replaced by the chief nursing officer who adopted
51 41 the same leadership style. The latter seemed overwhelmed by day-to-day operational management
52 42 responsibilities. During our field work, we noted that the management of the hospital was poor. No
53 43 organizational action plans were available, and there were no meetings. Strikingly, our focus group
54 44 discussion with nurses was the only meeting they attended in three years. We observed high level of
55 45 absenteeism among hospital staff.

59 47 **The perspective of staff**

Leadership style

Our analysis shows that the close collaborators, administrators and technical staff appreciated the leadership of CEO 1, because he reduced role ambiguity and job pressure. However, nurses and doctors were unhappy with his overcontrolling behaviour and engaged in resistance. Also CEO 2 was appreciated by his close collaborators, now because of his gentle wording and good interpersonal management. However, doctors and nurses perceived his *laissez-faire* leadership as non-responsive to their needs in terms of resources and working conditions. This had led to reduce their public service motivation by reducing their willingness to improve service delivery and to work for the common good. Some have expressed that *laissez faire* leadership has catalysed their intention to quit the public sector for good.

“Nowadays the strength and pace of my motivation to improve the service quality has decreased. This is essentially due to the lack of responsiveness of the hierarchy to my needs. There is no response. Even though we are engaged to improve our working conditions and the panel of services, the lack of feed back from the management teams has stopped our willingness to improve health service delivery. I found myself complaining alone. This has reduced my attraction to improve public service. This has negatively impacted my psychological well being. In all cases, I get my salary at the end of the month, however, from my personal point of view, I could not contend my self to work without thriving to improve the quality of public service at the pediatric unit. My husband is telling me that improving service delivery in the public sector is not my mission and that I am not a sort of social reformer!!. I am always told that these poor working conditions are common in the public sector and I need to stop trying to work for the common good. My motivation has decreased for while now. But I hope later to I try again with the new chief provincial hospital that has recently been appointed. Maybe, he will be more responsive to our needs than the former. If in the coming three years this does not change, I will quit the public sector and start my own private practice (RKMH 16 paediatrician)

Respondents complained management engaging in clientelism and nepotism, which they found to conflict with their public service values.

“The chief of the admission office is carrying out tasks that are not his. He manages the personnel! Staff who come from the town of CEO2 are privileged compared with others. Decisions are guided by his close interpersonal relationship with them”. RKMH 11, Nurse.

“For instance, when I take necessary administrative measures to correct staff absenteeism, the provincial district officer takes no actions to sanction these deviant behaviours. My authority is weakened. Either you accept staff’s deviant behaviours and thus participate in this “crime”, or you are intransigent and staff will build an alliance against you and you will be demonised. As you may know, unions and political parties are corrupt, they seek only the interest of their members and not the general interest” RKMH 15, Administrator.

Staff perceived that they were unable to treat adequately patients because of lack of material and resources (e.g. laboratory tests, mobile radiology, etc.) and the inadequate organisational support to their supply needs. They did not feel self-efficacious. Some felt that they were doing more harm than good for patients. This reduced their PSM and negatively impacted their psychological well being.

1
2
3 1 *"We suffer because we transfer patients for simple technical procedures that we could have*
4 2 *handled locally"* RKMH 10, Nurse.

5 3
6 4 *"We often ask relatives to help us carry patients with a fractured femur to the fixed X Ray*
7 5 *table. By doing this, we may worsen the fracture. I feel sorry when I had to ask sick patients*
8 6 *to go themselves to the fixed X-Ray table. No organisational support is given, despite our*
9 7 *relentless asking the administration to provide us with a mobile X Ray system."*RKMH 14
10 8 Radiology technician
11 9

12
13
14 10 Poor management and bad working conditions led to low levels of perceived organisational support
15 11 amongst nurses. Staff felt inadequately supported by their supervisors and were left to face
16 12 problems in the execution of their daily tasks. This created a stressful job pressure they were unable
17 13 to deal with.

18 14
19 15 *" During the transfer (of a patient to the referral hospital), we do not focus on what care to*
20 16 *give to the patient, but we are stressed by the poor conditions of the ambulance. It is not an*
21 17 *ambulance, it is a wreck!"* RKMH 12, Nurse anaesthesiologist"
22 18

23 19 Reluctance of the managers to start up legal procedures against patients or families who assaulted
24 20 nurses or doctors further reduced the latter's trust in the management.

25 21
26 22 *"Many times, staff were assaulted. The management just forgave the assaulter, because the*
27 23 *CEO knows him. Leaders should support staff, ... support them in a sense that if someone of*
28 24 *us is assaulted one day, I mean a nurse staff in his shift or a doctor, staff should be protected.*
29 25 *This assault should not be considered as an assault on an individual person, it is an assault on*
30 26 *all of us, on all health care providers cadres in general."* RKMH 24, Nurse, ED.
31 27

32 28 ***Public Service Motivation***

33 29
34 30 In this hospital, we found that frontline providers value the importance of adequately serving
35 31 patients and improving health outcomes. They derive satisfaction from relieving suffering and saving
36 32 lives, or at least preventing them from developing complications. Health workers mentioned that
37 33 compassion, self-sacrifice, serving the underprivileged and caring for the poor are crucial drivers of
38 34 their public service motivation.

39 35
40 36 *"We often sacrifice our own time for the sake of patients and for the sake of God to avoid*
41 37 *unnecessary delays and prevent parturients from getting complications, for exemple, severe*
42 38 *neurological and cardiac complications of post partum haemorrhage. We even help patient's*
43 39 *families to pay for ambulance fees in order to avoid delays".* RKMH 14, midwife

44 40 *"Here, I work a lot with vulnerable citizens. It is a reward in itself to serve poor*
45 41 *patients. It is my source of motivation".* RKMH 3, Doctor
46 42

47 43 We noted that the *laisser-faire* and transactional leadership had a negative effect on staff with high
48 44 levels of public service motivation. It led to psychological distress, low organisational commitment
49 45 and self-interested behaviour. This was compounded by the perceived organisational politics (see.
50 46 clientelism and nepotism).
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Summary

Our analysis showed that the *laissez-faire* and transactional leadership in this hospital did not respond to the basic psychological needs of health workers. This led to reduced public service motivation with negative consequences on their psychological well-being, because of the lack of opportunities of experiencing valued patient outcomes (e.g saving lives).

The leadership styles also contributed to low perceived organisational support, which in a context of perceived organisational politics, in turn lowered organisational commitment, and increased self-interested behaviour and mistrust between administration and staff.

SMBA Hospital

Main leadership and management practices

In SMBA hospital, one of the low-performing hospitals, there were three leadership periods. CEO 1 (2007-2010) displayed strong transactional leadership, emphasising conformity with rules and procedures and insisting on top-down hierarchal management. He carried out many performance audits and clinical supervisions, and organised training to staff. He showed high moral standards and was both respected and feared by staff. He was replaced in 2010 by CEO 2, who retired in 2013. He had some experience in management, displayed transactional leadership and stressed the conformity with rules similarly to his predecessor. In 2014, CEO 2 was replaced by CEO 3, who adopted a *laissez-faire* leadership. The hierarchical line was no longer respected. He managed the hospital poorly: no organisational action plans were available, and he did not carry any audit nor supervision. No inter-units meetings were held and the departmentalisation process was halted. During our field work, we observed a strike of the clerical officers in charge of hospital admission and of the private company in charge of security in reaction to bad working conditions and perceived low responsiveness of management to their needs.

The perspective of staff

Leadership style

CEO 1 and 2 were highly appreciated by the administrators and their close collaborators. The health professionals (nurses and doctors) pointed to reduced perceived organisational support and to lack of participative decision making. Under the leadership of CEO 3, staff felt less supported by their supervisors. They said they were left to deal with problems alone. Lack of clarity of goals led health workers to perceive role ambiguity and job pressure.

Poor management and low responsiveness of leaders to staff needs in terms of improving working conditions decreased their public service motivation.

“Leaders do not play a role in our motivation. [...]. We came to work despite constraints and poor working conditions. If we were only motivated by working conditions, we wouldn’t come to work. The management team was even unable to timely replace a broken window of our reception desk counter!” SMBA 29, Reception desk officer

1
2
3 1 Our respondents also mentioned the clientelism and nepotism of CEO3, who privileged some staff
4 2 and patients over others. This led to perceived organisational politics and mistrust, and contributed
5 3 to low organisational commitment, demotivation and crowding out of public service motivation.
6 4

7 4
8 5 *"In this hospital, there are some external actors who pretend to do social work, and pretend
9 6 to act as benefactors. These external actors, often members of associations, intervene
10 7 illegitimately in hospital activities. They are like parasites. They definitely impact on our
11 8 productivity. They are like stockbrokers. They do not care about citizens. They frequently
12 9 mediate between citizens and services providers. The CEO responds quickly to patients needs
13 10 when these actors are involved. This what I call clientelism. This is not fair! All citizens are
14 11 equal"* SMBA 21, support staff, reception desk.
15 12
16 13

14 14 **Public service motivation**

15 15
16 16 Physicians and nurses perceived compassion with patients' conditions and self sacrifice as major
17 17 components of their public service motivation.

18 18 *"Patients are important for me because I got sick myself. So, I sense what the
19 19 patients are feeling. My family members, my daughter and my grandmother got
20 20 sick. I feel the pain patients are suffering from. I can feel their suffering."* (SMBA 35,
21 21 Nurse).
22 22

23 23
24 24
25 25
26 26
27 27
28 28
29 29 Public service motivation is also driven religious cultural beliefs including elements of fear of God
30 30 and divine rewards.
31 31

32 32 *"We work because of our sense of humanity, our own consciousness and our fear of God.
33 33 One day, we will be asked about the quality of work we have done in the past. We feel sorry
34 34 for patients, SMBA 29, reception desk officer"*
35 35
36 36

37 37
38 38 Staff said they were suffering from psychological distress due to poor working conditions, and
39 39 experienced feelings of guilt because of their inability to perform their job adequately and to ease
40 40 their patients suffering. Lack of opportunities to experience positive patients outcomes reduced
41 41 their public service motivation.
42 42

43 43 *"When you do not have necessary material you are in trouble! It is not only a constraint but a
44 44 source of suffering. Instead of relieving patients' distress, it is us who get stressed."* SMBA 45,
45 45 Doctor.
46 46

47 47 *«Here, resources are limited compared to the teaching hospital where we were trained.
48 48 Real world practices are really different. When we first were assigned to this hospital we
49 49 could not change things around. This is really depressing. We have the ability to provide
50 50 specialised care but we do not have the necessary resources to do it ! , SMBA 42, Doctor.*
51 51

52 52
53 53 This impacted negatively on their perceived organisational support. This led to crowding out of their
54 54 public service motivation and lowered their organisational commitment and their well-being.
55 55

56 56 *"It is really depressing. I do not want to work anymore because I do not have the necessary
57 57 resources.[...] I often cry when I watch newborns suffering from intramuscular injections
58 58 because nurses are not skilled to administrate intravenous infusions to newborns and often
59 59 use instead intramuscular injection for 10 days. I am not only frustrated, I hate entering
60 60 neonatology service!!!. I only grudgingly go see my patients whereas in the past I loved*

1
2
3 1 *providing neonatology care. I cannot stand seeing newborn almost dying of hypoglycaemia*
4 2 *0.3g/l because they are not adequately fed. This is due to the acute shortage of nurses (one*
5 3 *nurse per shift) who are unable to reconcile between administering antibiotics and*
6 4 *treating infections and baby feeding. I am not anymore motivated to cure newborns*
7 5 *'infections but I am terribly stressed avoiding newborns to die from hypoglycaemia. If babies*
8 6 *are left alone with the feeding bottles they may die by suffocation. How can we come*
9 7 *motivated to work in the next morning? of course not!!! SMBA 42, paediatrician.*
10 8

11 9 Shortage of material reduced their ability to properly care for patients, which reduced their PSM and
12 10 contributed to a reduced sense of competency, self-efficacy and autonomy.
13 11

14 12 *"During my pediatric residency, I practiced neonatology and neonatal reanimation for two*
15 13 *years, I developed many skills that I am not using now because I do not have the necessary*
16 14 *equipments. I have only few neonatal resuscitation tables and two sources of oxygen for 21*
17 15 *patients. I do not have a respirator. During my training I learned to intubate and manage*
18 16 *cardiorespiratory distress. Now, in neonatology service instead of using unavailable syringe*
19 17 *pumps, we manage pediatric diabetes by intravenous perfusion. I never been thought to do*
20 18 *this!!". SMBA 42, paediatrician.*
21 19

22 20 *"I am very proud to serve my population, however I am truly unsatisfied. We have strong*
23 21 *faith and we work eagerly to serve people. But our faith is not sufficient. We need more*
24 22 *ressources. For exemple, I am often called for patients with cranial trauma. We do what is*
25 23 *possible depending on available ressources. Cerebral trauma patients need an emergency*
26 24 *cerebral CT-scan and the golden hour must be respected. When they arrive at the hospital,*
27 25 *often with a delay, the CT Scan is unavailable. It is often out of order. What could we do? In*
28 26 *this case, We help teams transfer the patient to the nearby hospital in Marrakech. We often*
29 27 *collect money to pay ambulance fuel and to avoid extradelays. I feel that my contribution to*
30 28 *patient health is useless, despite being present for about 5 or 6 six hours at night. I feel that*
31 29 *our contribution is hampered by organisational problems that are beyond our control".*
32 30 *SMBA 43, intensive care anaesthetist*
33 31

32 Summary

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34 In this hospital, we found that leaders (like CEO 1) who are perceived as showing a high sense of
35 moral and ethical standards, and who stimulate the awareness of staff of public service values and
36 their contribution to society, were positively considered by some cadres. For the administrative
37 staff, the transactional leadership displayed by CEO 1 led to higher clarity of goals, reduced job
38 pressure and increased extrinsic motivation. However, it was negatively perceived by frontline
39 workers because they felt it did not respond to their needs for autonomy.
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41 *Laisser faire* leadership crowded out public service motivation by reducing frontline healthworkers'
42 opportunities to help. Such management did not respond to the basic psychological needs of staff
43 and led to low organisational commitment.
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45 In Table 3, we present a summary of the perspectives of staff on the leadership and management
46 practices. We present in the first column key summary data derived from the initial exploratory case
47 study (NHMH hospital) and detailed in (Belrhiti,2019(88) in press) .
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Table 3 - The perspectives of staff on the leadership and management practices

NHMH	EJMH	RKMH	SMBA
<p>CEO 1 (2007-2013) <i>Transactional leadership</i> Conformity to rules and procedures, role model. Improved staff working conditions. Staff perspective Strong perceived leader support, which catalysed the quality culture</p> <p>CEO 2 (2014-2016) <i>Transformational leadership</i> Clear communication of his vision. Genuine concern for staff needs. Enhanced staff mission valence. Distributed leadership Stimulated network formation, "kind heart actions" Staff perspective Responsiveness to their basic psychological needs Reinforced existing clan culture. Positive organisational climate (mutual trust and team work). This led to increased organisational commitment and extra role performance, In 2016, the hospital won the second price in the national quality contest).</p>	<p>CEO 1 (2012-2015) <i>Transactional leadership</i> Power-assertive attitude. Overemphasis on compliance with rules and procedures Staff perspective Perceived distant leader. Low perceived autonomy support. Decreased organisational commitment. Mistrust, conflicts and tensions with unions.</p> <p>CEO 2 (2015-2018) <i>Transformational leadership</i> Good communication of vision and objectives. Genuine concern for the needs of staff. Distributed leadership Constructive dialogue to resolve professional issues. Catalysing role of mid-level managers. Participative decision making. In 2016, the hospital won the first price of the quality contest. Staff perspective High perceived autonomy support. Good congruence with professional and public service motives. Trust relationship between staff and management team. Reduced tensions with unions.</p>	<p>CEO 1 (2010-2012) <i>Transactional leadership</i> Strict application of administrative procedures Staff perspective Appreciated by administrators and close collaborators. Increased extrinsic motivation of staff. Nurses and doctors resisting to his overcontrolling behaviour engaging in conflicts and strikes.</p> <p>CEO2 (2012- 2018) <i>Laisser faire leadership</i> Often absent. Chief Nursing officer overwhelmed by day to day operational management duties. Staff perspective Appreciated by administrators and close collaborators. Nurses and doctors unhappy about lack of responsiveness to their needs and the poor working conditions. Conflictual organisational climate, characterised by high job pressure and role ambiguity. Perceived organisational politics (nepotism and clientelism), contributing to perceived unfairness.</p>	<p>CEO 1 (2007-2010) <i>Transactional leadership</i> Enforcement of hierarchy. Emphasis on conformity with rules and procedures. Audit and clinical supervision. High moral standards. Staff perspective Highly appreciated by close collaborators and administrative staff. Nurses and doctors perceived a lack of participative decision-making and reduced perceived autonomy support.</p> <p>CEO 2 (2010-2013) <i>Transactional leadership</i> Enforcing conformity with rules and regulations. Close supervision, administrative sanctions. Staff perspective Well appreciated by administrators and close collaborators Perceived unresponsiveness to nurses' needs.</p> <p>CEO 3 (2014-2018) <i>Laisser faire leadership</i> Hierarchical line not respected. No meetings, no clinical supervision. No inter-unit interaction. Staff perspective Decreased organisational commitment</p>

<p>1 2 3 4 CEO 3 (July 2016-Sep 2017): Laisser faire leadership 5 6 Passive attitude. Reliance on administrative 7 correspondence. 8 Poor communication with staff. Hierchical line 9 not enforced 10 Staff perspective 11 Role ambiguity, high job stressors. 12 Unresponsiveness to staff needs. Deteriorating 13 working conditions. Perceived organisational 14 politics. Demotivation, conflicts and tensions 15 with unions. 16 17 CEO 4 (Oct 2017-March 2018): 18 Transactional leadership 19 Reinforcing the hierachical line. Building 20 alliance with informal leaders. 21 Staff perspective 22 Distant leader. 23 Reduced perceived autonomy support. 24 Improved working conditions. 25 Claryfing goals reduced role ambiguity and job 26 pressures for admin. staff 27 Reduced interaction between health units. 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46</p>			<p>Inadequate woking conditions and supply of consumables. Low perceive organisational support. High role ambiguity and job pressure. High level of perceived organisational politics.</p>
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Cross case analysis and refined causal configurations

Comparing the initial programme theory with the results of the analysis of the data from the hospitals EJMh, RKMh and SMBA allowed us to refine it (table 4). We used the Intervention-Context-Actor-Mechanism-Outcome (ICAMO) configuration to structure the analysis (119). We confirmed or refuted the four causal configurations presented above.

ICAMO configuration 1: *Laisser faire* leadership and PSM

This configuration was confirmed in the RKMh (CEO 1) and SMBA (CEO 3) hospitals (See table 4 and figure 3).

Laisser faire leadership [I] decreases intrinsic motivation and public service motivation [O] of health providers [A] by being less responsive to the basic psychological needs of autonomy, competence and relatedness [M] and by reducing perceived organisational support [M] in situations of reduced opportunities to experience positive patient outcomes [C].

Laisser faire leadership [I] contributes to mistrust between administration and staff, resistance to change and tensions with unions [O] by inducing perceived job pressure and role ambiguity [M] for health providers [A].

Laisser faire leadership [I] reduces public service motivation [O] in a context of perceived organisational politics (clientelism and nepotism) [C] by being incongruent with individual public service values [M] of all cadres [A].

Figure 3 - *Laisser-faire* leadership and PSM (ICAMO 1)

ICAMO configuration 2 - Transactional leadership and PSM

This configuration is confirmed by empirical data from the three hospitals (EJMh (CEO 1), RKMh (CEO 1), SMBA (CEO 1 and 2)). As a result, we retain ICAMO 2 as follows (see figure 4):

If transactional leadership ensures adequate support and working conditions of administrative staff [I] or if enforces a clear hierarchical line [I], it can reduce job pressure [M] and reduce role conflict [M] and thus increase the extrinsic motivation of administrative staff [O] and the level of organisational commitment [O]. If transactional leaders [I] are felt by health professionals [A] to be distant, this can reduce perceived autonomy support and reduce the satisfaction of the need for mutual respect (relatedness) [M], leading in turn to reduced motivation [O] and low organisational commitment [O].

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3 1 **Figure 4 Transactional leadership-PSM (ICAMO 2)**
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8 5 **ICAMO configuration 3: Transformational leadership and PSM**
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10 6 Configuration 3 is confirmed only in EJMh hospital (CEO2) (Table 4 and figure 5).
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12 7 Transformational leadership understood as inspiring staff (walking the talk), infusing jobs with
13 8 public service values and showing individual consideration to staff [I] increases public service
14 9 motivation [O] by responding to basic psychological needs of autonomy and relatedness [M]
15 10 of all staff [A] and contributes to higher organisational commitment and expressed mutual
16 11 trust between staff with administration [O].
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21 15 **Figure 5 Transformational leadership and PSM (ICAMO 3)**
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29 19 **ICAMO configuration 4: Distributed leadership and PSM**
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31 20 Distributed leadership was observed only in the high performing hospitals EJMh and NHMH (see
32 21 figure 6).
33 22

34 23 Distributed leadership in the sense of creating a supportive and open climate and good
35 24 relations between staff [I] increased staff public service motivation [O] and organisational
36 25 commitment [O] and led to extra role behaviours by satisfying staff basic psychological needs
37 26 [M] and increasing trust in management teams [M].
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40 28 **Figure 6 Distributed leadership and PSM (ICAMO4)**
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44 31 As described in table 3 and 4, we noticed that only CEO2 in NHMH and CEO2 in EJMh displayed
45 32 complex leadership understood as the balancing between transactional, transformational and
46 33 distributed leadership that fits best the diversity of professional profiles, the nature of the tasks and
47 34 the organisational culture. Transactional leadership fits the administrators who value role clarity and
48 35 reduced job ambiguity, whereas transformational and distributed leadership addresses the basic
49 36 psychological needs of health providers. The other CEOs either adopted a transactional leadership
50 37 style or laissez faire leadership, which was not well received by a majority of staff.
51 38

52 38 The four ICAMOs presented above allowed us to refine our initial programme theory:
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55 41 Complex leaders, applying an appropriate mix of transactional, transformational and
56 42 distributed leadership styles that fit organisational and individuals characteristics [I] can
57 43 increase public service motivation, organisational commitment and extra role behaviours [O]
58 44 by increasing perceived supervisor support and perceived organizational support and
59 45 satisfying staff basic psychological needs [M], if the organisational culture is conducive and in
60 46 the absence of perceived organisational politics [C].

Table 4 Testing the initial configurations in the study sites

Programme theories based on literature review and the study of NHMH Hospital	EJM Hospital	RKM Hospital	SMBA Hospital
Laissez faire leadership decreases the levels of perceived organisational support and staff motivation by being less responsive to their basic psychological needs of autonomy, competence and relatedness. Lack of vision and goal setting contributes to a climate of ambiguity and role conflict. The inadequate enforcement of the hierarchical structure and high job pressure can contribute to mistrust between administration and staff.	Not confirmed not refuted.	Confirmed and refined: <i>Laissez faire</i> leadership decreases the levels of [...]. contributes to general malaise, mistrust between administration and staff and decreases public service motivation and psychological well being. This mechanism is triggered by the lack of opportunities for experiencing positive patient outcomes and the perceived organisational politics	Confirmed.
Transactional leaders can improve extrinsic motivation of staff if they offer the necessary support and ensure adequate working conditions. By improving the latter, transactional leaders reduce job pressure and by implementing a clear hierarchical line they reduce role conflicts.	Confirmed and refined. Transactional leaders are effective on staff extrinsic motivation leading in turn to reduced motivation” and low organisational commitment and tension with unions.	Confirmed	Confirmed
By showing individual consideration and communicating clearly about mission valence, transformational leaders enhance self-esteem of staff, perceived supervisor support, and satisfaction of their autonomy needs. This in turn contributes to staff commitment, mutual trust and respect between the management team and staff.	Confirmed	Not confirmed nor refuted, because no transformational leadership was enacted in this hospital.	Not confirmed nor refuted because no transformational leadership was enacted in this hospital
Distributed leadership can contribute to improved communication and interaction between staff from different units, to problem solving and a reinforced clan culture. Distributing leadership roles and embedding	Confirmed	Not confirmed nor refuted, because no distributed leadership was enacted in RKM.	Not confirmed nor refuted because no distributed

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them throughout the organisation, combined with engaging staff in decision making, contributes to staff's perceived autonomy and organisational commitment, which in turn leads to extra role activities			leadership was enacted in SMBA.
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For peer review only

Discussion

In this study, we explored mechanisms and contextual conditions by and in which leadership influences “public service motivation” of health workers.

Our study shows, in line with leadership literature (123, 124), that *laissez faire* leadership decreases intrinsic motivation and public service motivation of all cadres by being less responsive to the basic psychological needs of autonomy, competence and relatedness of staff and by reducing perceived organisational support (1, 5, 93).

Our findings suggest that *transactional* leadership, when it ensures adequate managerial support and improvement of working conditions, can enhance the extrinsic motivation of staff by reducing role ambiguity and job pressure, and by increasing perceived organisational support. This is supported by other studies (125-128). However, we also found indications that *transactional* leadership can crowd out intrinsic motivation and public service motivation of health workers by reducing the satisfaction of their needs for autonomy. This is supported by other studies in LMIC (40, 41, 129-131).

We found *transformational* leaders who clearly communicate their vision and walk the talk, infuse jobs with public services meaning, and show individual consideration can enhance PSM by responding to their need for relatedness. This is supported by recent studies, for instance (29, 56, 75, 78, 132-136). Transactional leadership can lead to higher organisational commitment and extra role behaviours (137, 138).

Distributed leadership facilitated teamwork, information flows, and team cohesion. It nurtured feelings of connectedness, enhancing the perception of autonomy support and perceived organisational support. This led to creative problems solving, collective learning and better performance at the quality assurance contest, in ways similarly to other study findings (11-15, 139).

Our study supports the hypothesis that the effect of leadership on PSM depends on the degree of responsiveness to basic psychological needs (autonomy, competency and relatedness). This points to the relevance of self-determination theory (93, 107) as a middle range theory that may frame how individual psychological mechanisms underlie the effects of leadership on staff motivation (extrinsic motivation, intrinsic motivation and PSM). It also supports the hypothesis that the effect of leadership on PSM is conditioned by the existence of a conducive organisational culture (a clan culture and absence of perceived organisational politics). This is explained by value congruence, understood as the degree of congruence between individual and organisational values, which represents a major mechanism in the integration of public service values in individual behaviours (70, 140-142).

In summary, in healthcare organisations, leaders able to adapt their leadership practices to the nature of individuals and organisational characteristics (complex leaders) are likely to be more effective. They foster networking and connections between staff by distributing leadership responsibilities and reinforcing the role of middle managers, infusing jobs with meaning and creating constructive dialogues with professional health workers (12, 89, 143-146).

Study contributions, validity and limitations

This study contributed to fill the gap in leadership studies in general (83, 147, 148) and in healthcare specifically (62, 149) by unravelling the underlying mechanisms of leadership effects on health

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3 1 workers' motivation. It contributes to the study of leadership in North African muslim countries, a
4 2 neglected field of research (150).
5 3

6 4 This study contributes to the case that realist evaluation can contribute to building a better
7 5 understanding of complex phenomena in health systems (85). Realist evaluation proved an
8 6 appropriate approach to unravell the relationship between leadership and PSM, and thus
9 7 responded to calls of PSM scholars for robust research methodologies (33, 35, 37, 76, 77).
10 8

11 9 The Realist Evaluation (RE) proved to be a suitable approach for capturing the multilevel dynamic
12 10 nature that evolved over time and across contexts. RE facilitated the unveiling of causal
13 11 mechanisms (value congruence and satisfaction of basic psychological needs) and the contingent
14 12 effect of contextual factors (organisational culture, climate and perceived organisational politics)
15 13 and the individual reasoning of different social actors (e.g. perceived supervisor and organisational
16 14 support) (85, 151, 152).
17 15

18 16 By using ICAMO configurational analysis, we were able to provide evidence on the contextual
19 17 nature and social construction of leadership. Adopting a situational approach on leadership help
20 18 overcome the inconsistency of findings when studying leadership effectiveness in organisations(153-
21 19 155)
22 20

23 21 In addition, the qualitative multiple embedded case study design proved appropriate in providing
24 22 qualitative design rich, dynamic, contextual data with a focus on mechanisms rather than
25 23 variables(156). Qualitative approaches are complex sensitive and allow for more research flexibility
26 24 in unveiling the mechanisms and conditions underlying complex social phenomena in general and
27 25 more specifically leadership effectiveness in health (99, 156-159)
28 26
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30 28 The validity of our study findings derive from theoretical guidance in study design, sampling and
31 29 analysis and cross-validation (160-162) and theoretical replication across cases (120). Theoretical
32 30 replication allows for a retroductive process of knowledge creation (120) by constantly shuttling
33 31 from theory to empirical data and by continuously refining our programme theories across negative
34 32 and positive cases.
35 33

36 34 There are limitations to our study. The causal configurations developed here are the most plausible
37 35 explanation for the outcomes observed in our study, but may likely not be the unique explanation.
38 36 Further empirical testing in a larger set of cases would enable to further refine the programme
39 37 theories. A second limitation is that we did not quantitatively measure public service motivation,
40 38 organisational commitment, perceived organisational support and other variables. The time and
41 39 resource limits of the PhD study , of which the study presented here is part, precluded testing and
42 40 validating existing scales for these constructs.
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45 43 **Implications for practice**

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47 45 In Morocco, similarly to other low- and middle-income countries (56), the hierarchical culture within
48 46 the Ministry of Health favours transactional leadership styles (49, 163) and this may impede the
49 47 emergence of PSM (164-166). We raise some concerns in relation to the actual health reforms carried
50 48 out in Morocco, which are inspired by New Public Management (e.g. performance-based
51 49 management, contracting out and public-private partnerships) and which may have negative
52 50 consequences on health workers performance by facilitating the practice of transactional leadership,
53 51 focusing on extrinsic rewards (and sanctions) and crowding out the expression of PSM and self-

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3 1 altruistic behaviours of frontline health workers. Policy makers should stimulate the development of
4 2 complex leadership competencies (e.g. fostering network building, generative sense making, see also
5 3 (89) in their capacity building programs.
6 4

8 5 **Conclusion**

9 6
10 7 In the context of health care organisations, the motivation of health workers relies on individual,
11 8 organisational and contextual antecedents. The effectiveness of leaders depends on the degree of
12 9 responsiveness to the basic psychological needs of health workers and on value congruence
13 10 between organisational and individual values. Leaders should learn how to adapt their leadership
14 11 practices to the organisational characteristics (nature of task, mission valence) and to type of
15 12 motivation of health workers (extrinsic versus intrinsic and PSM). Further research is needed to
16 13 explore the role of value congruence and to understand how the social institutions (i.e. religion,
17 14 family education, professionalism) may shape the expression of public service motivation of health
18 15 workers in low and middle income countries.
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35 29 **Abbreviations :**

36 30	CEO : Chief Executive Officer
37 31	CQ : "Concours Qualité"
38 32	FGD : Focus Group Discussion
39 33	ICAMO : Intervention, Context, Actor, Mechanism, Outcome.
40 34	IDI : In-depth Interview
41 35	ITM : Institute of Tropical Medicine
42 36	LMIC : Low -and Middle-Income Countries
43 37	PHO : Provincial Health Officer
44 38	PSM : Public Service Motivation
45 39	RE : Realist Evaluation

52 40 **Declarations :**

56 42 **Ethics approval and consent to participate**

57 43 The research protocol was approved by the Moroccan Institutional Review Board (n°90/16) of
58 44 the Faculty of Medicine of Pharmacy, Rabat and the Institutional Review Board of the Institute of
59 45 Tropical Medicine, Antwerp (n° 1204/17). All participants have been informed prior to the conduct

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3 1 of the research and written consent forms were signed by the respondents and countersigned by the
4 2 researcher. A signed copy was given to each respondents.

5
6 3 **Consent for publication** : « Not Applicable »

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9 5 **Availability of data and material** : « Data sharing not applicable as no datasets generated and/or
10 6 analysed for this study»

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14 8 **Competing interests**

15 9 The authors declare that they have no competing interests.

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23 15
24 16 **Authors contributions**

25 17 All the four authors (ZB, BM, WVD,AB) contributed to the original design and analysis and writing of
26 18 the manuscript. ZB carried out the data collection. BM cross checked the transcripts. Initial coding
27 19 was done by ZB and discussed between the research team members(BM,WVD,AB). ZB edited the
28 20 final draft. All authors read and approved the final manuscript..

29 21
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36 28
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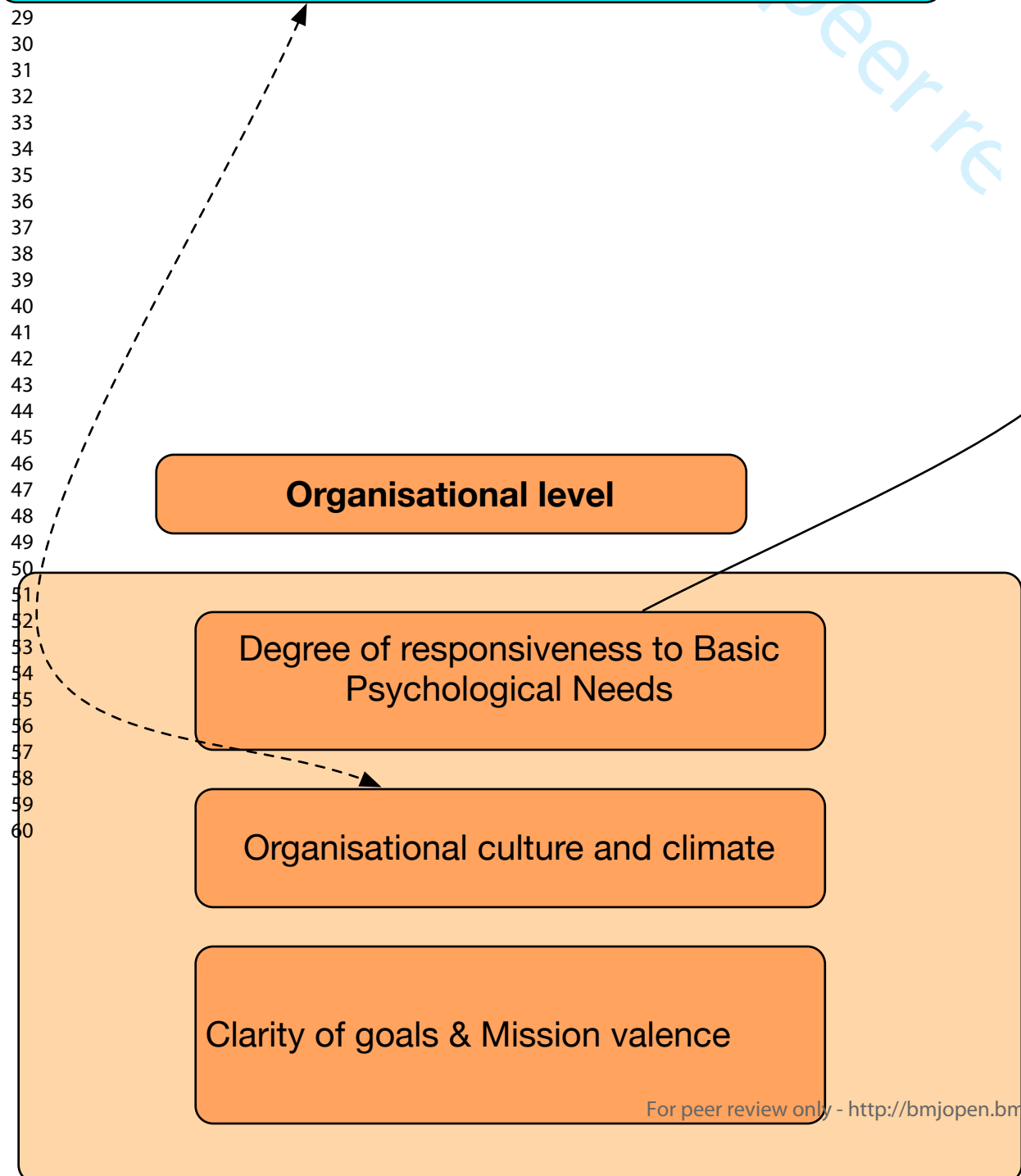
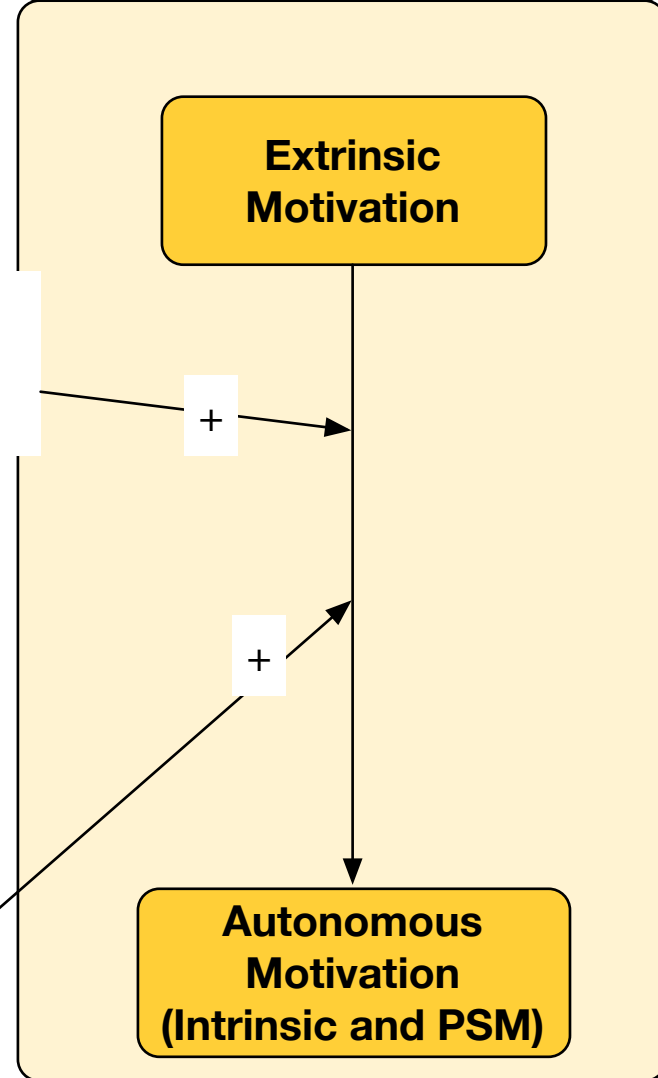
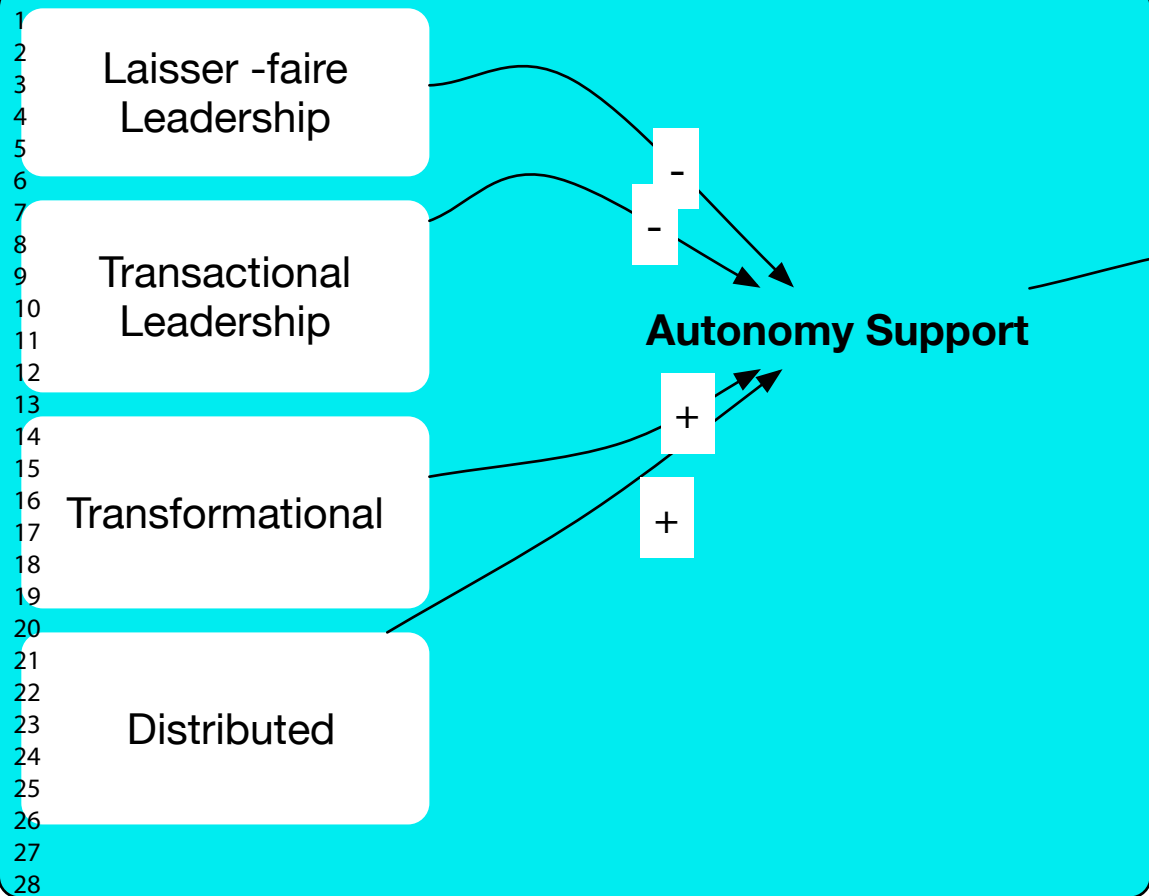
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Leadership practices

Individual level



Degree of Perceived Organisational Support

Degree of congruence Organisational & Individual motives

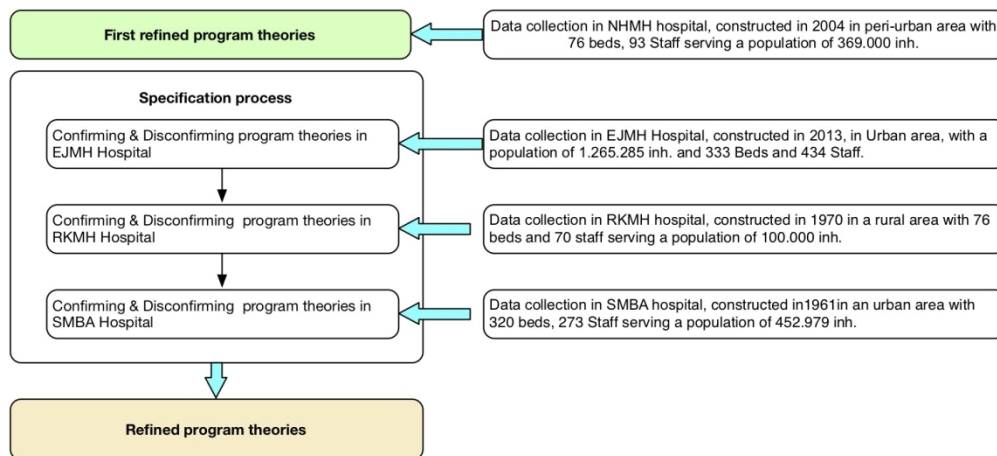


Figure 2 - Cases studies and data collection, Morocco, January-June 2018

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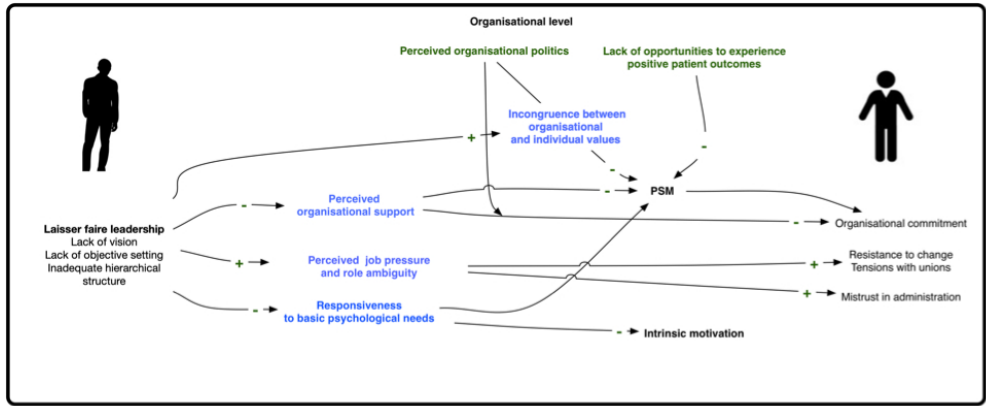


Figure 3 - Laissez-faire leadership and PSM (ICAMO 1)

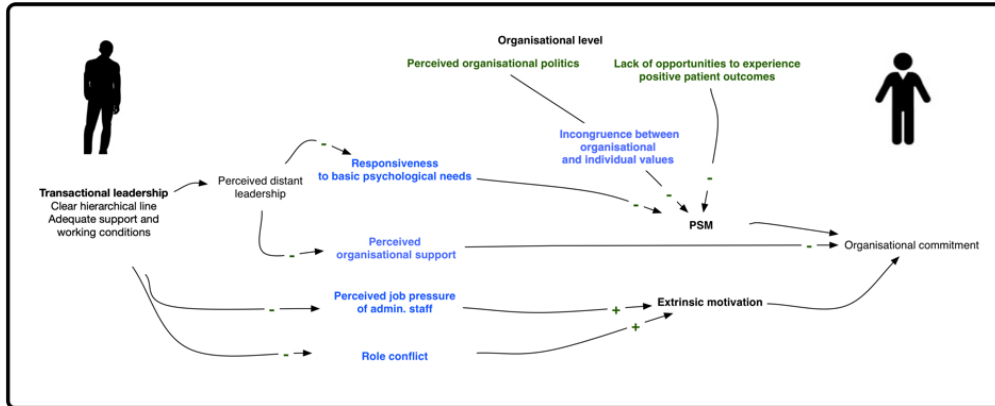


Figure 4 - Transactional leadership-PSM (ICAMO 2)

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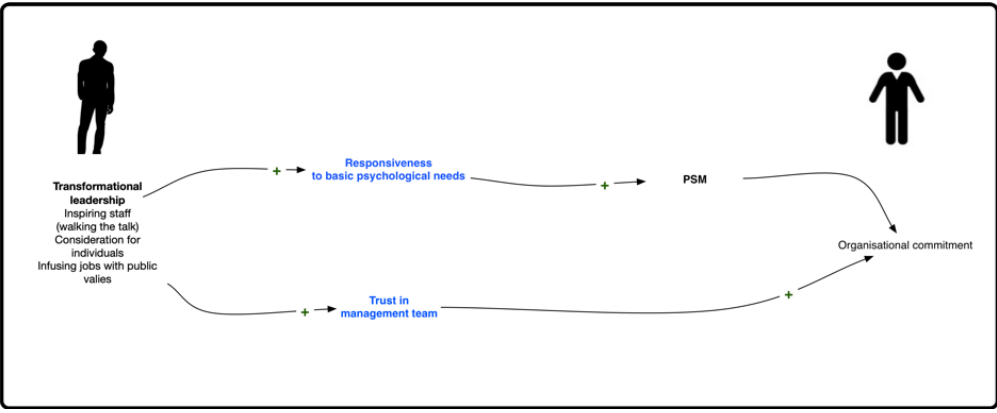


Figure 5 - Transformational leadership and PSM (ICAMO 3)

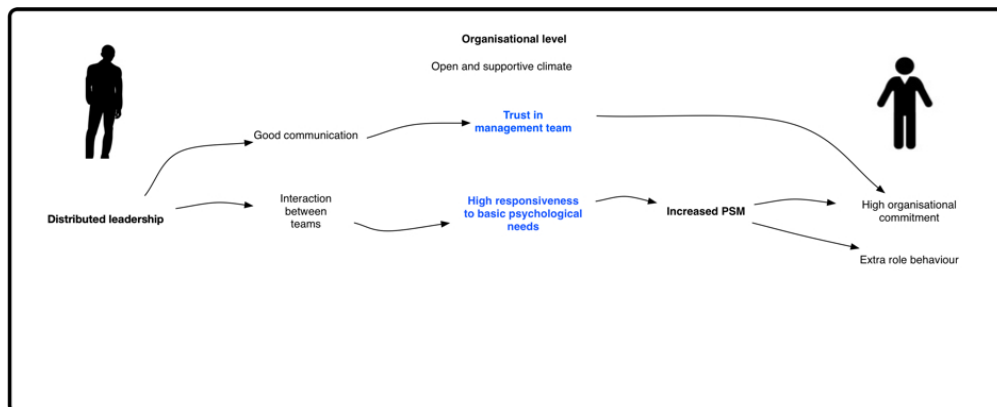


Figure 6 Distributed leadership and PSM (ICAMO4)

Supplementary file 1 Open ended interview

This interview topic guide gives an indication of the main questions that will be asked in the interviews of health service managers and providers. Core questions were adapted to meet the specificity of each category (senior managers (Questions 1 to 4), intermediate managers (Questions 1 to 5); health professional (Questions 2 to 5)).

Components	Objectives/Remarks / Questions
Introduction	Researcher presentation (Name, qualification, institution)
	Interview objectives
	Explain the procedure (Time, Clarification questions, information about voluntary participation and the autonomy to respond or not to sensitive question and information about consent forms)
	Explain confidentiality and data anonymisation procedures
	Ask permission to record the interview (Audio record and notes)
	Obtain informed consent
Adjust the recording device	Make sure that equipment is functioning and the room is not noisy
General part	To get overall idea about the interviewee and make him/ her comfortable
	Q : How old are you ?
	Q : Could you describe your actual job position? Your tasks?
	Q : How long have you been working in your actual position?
	Q : How long have you been working in this hospital?
	Q : Where have you worked before? In which function?
Introduction to specific questions	Transition to core questions
1) Leadership Practices	Q : Could you describe you task?
	Q : Could you describe your role as a manager? P
	Q : What is your vision about leadership? What do a good leader means to you?
	Q : Would you give me some examples of your practice of leadership?
	Q : What challenges are you confronted with in you leadership practice ?
	Q : In your opinion, how could you describe your influence on staff behaviours ?
2)Hospital Performance	Q : In your opinion, what explain the good/bad performance of your hospital in "Concours Qualité" ?
	Q : Is it related to leadership? Does leadership matters?
3) Individual Performance	Q : In your opinion, what are the major reasons why a health professional is performant in health care provision?
	Q : According to you, what are he facilitators to individual performance?

	Q : In your opinion, what are the barriers to maintain a good individual performance for health professionals ?.
	Q : Is there a difference in the motivation between different cadres of health professionals or not?
	Q : How could you play a role in the motivation of your staff/ colleagues?
4) Public Service Motivation	Q : Could you explain what motivates you to work in this hospital ? (Motivation intrinsic/extrinsic)
	Q : how do you feel working in this hospital?
	Q : What attaches you to this hospitals, if any? Q: how do you describe this attachment?
	Q : serving citizens, what does it means for you?
	Q : Did you think about quitting the public service? If yes, why? If no, why?
	Q : Do you feel that you are doing tasks that go beyond your responsibilities, or not?
	Q : how could you describe you engagement about the organisational mission and vision?
	Q : Do you feel that you have the necessary information, tools and support to carry on your task, or not?
	Q : Do you engage in supplementary efforts without contingent financial rewards ? Could you give me some examples?
5) Leadership in your organisation	Q : Could you describe leadership practices in your organisations?
	Q : Do you feel that you are supported by your superior ? By management teams?
	Q : Could you provide some examples of leadership practices of your superior?
	Q : how could you describe relation between your interaction with your leader and your motivation?
Summary and debriefing	During this interview you gave me useful informations that are relevant to this study.
	Q : Is there something that you see as important regarding our topic we did not mention? If Yes we could discuss it. We do have time.
	Q: Do you have questions for me?

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For peer review only

Supplementary file 2 Focus Group Discussion Guide (senior managers)

themes	Questions	Prompts, clarifications, vignettes
Motivation	<p>Q 1 : What motivates at work at this hospital?</p> <p>Q 2 : How do you feel at work at the hospital?</p>	
Public service motivation	<p>Q2 : Why did you choose to the work at the public sector?</p> <p>You told me about your (de) motivation in the public sector? Could you explain your (de) motivation?</p>	
	<p>Q3 : Serving citizen, what does it mean to you ?</p> <p>Give me examples from your professional experience?</p>	
	<p>Q 4 : Did you think about quitting the public service? If Yes why? If no why not?</p>	<p>Vignette 1 Mr or Dr Rachid work in this hospital for 10 years, he did not leave the public hospital to work in the private sector because he feel satisfied with the help he is providing to the local underprivileged population What do you think about Dr /Mr Rachid perspective?</p>
	<p>Q 5 : Do that you are well paid according to your contribution to this hospital? If Yes why? If no why ?</p>	<p>Vignette 2 : Dr/Mr Rachid a has accompanied many patients in medical transfers although he is not well remunerated. he continues to do it when asked. What do you think about his attitude ?</p>
Leadership	<p>Q6 : in your opinion, what does it mean a good leader?</p> <p>Q 7 : How could you describe the leadership of your supervisors?</p> <p>Q 8 : Does managers' leadership matters for you to be performant at work?</p>	<p>Vignette 3 :A manager told me that leadership is important in the motivation of staff. Do you agree with that. ?</p> <p>Do you agree that leadership play a role in the staff performance?</p>
Interaction Leadership-Motivation	<p>Q 9 : How would you describe your the relationship between your interaction with the leader an your motivation ?</p>	
Organisational performance	<p>Q : According to you, what explains the good/bad performance of your hospitals in "Concours Qualité"?</p>	<p>Who was involved? Who took leadership roles? Who was responsible for decision making?</p>
	<p>Q : What makes you perform well/bad under the leadership of Mr/Mme ?</p>	

Table 1 frequency of leadership styles themes

	EJMH	NHMH	RKMH	SMBA
Laisser-faire Leadership	33	24	91	87
Transactional leadership	173	135	95	82
Transformational leadership	94	128	52	80
Distributed leadership	18	39	1	15
Complex leadership	142	221	40	94

Table 2 frequency of Leadership-PSM causal codes

PSM /leadership styles	Attraction to public service	Commitment to public values	Compassion	Self-Sacrifice
Laisser-faire leadership	2	12	21	5
Transactional leadership	12	20	4	4
Distributed leadership	2	0	0	0
Transformational leadership	20	16	16	8
Complex leadership	19	14	6	11

Table 3 Organisational characteristics (culture and climate) subthemes

	EJMH	NHMH	RKMH	SMBA
Market Culture	3	0	6	3
Pigeonholing	10	15	24	66
Hierarchical Culture	18	5	31	24
Conflict and ambiguity;	52	29	47	98
Job challenge, importance and variety	7	9	6	11
Perceived supervisor support	20	13	15	33
Professional and organisational esprit	104	138	94	46
Clan culture	42	74	28	60
Culture of integrity	9	28	0	3
Perceived organisational politics	27	19	36	24

Table 4 Individual motivation subthemes

Type of motivation	EJMH	NHMH	RKMH	SMBA
Amotivation	30	4	11	1
Extrinsic motivation	23	35	15	21
Intrinsic motivation	6	26	0	3
Public Service Motivation	171	241	237	326

Table 5 Basic Psychological needs subthemes

Psychological needs/site	EJMH	NHMH	RKMH	SMBA
Competency needs	8	25	20	12
Autonomy needs	6	4	2	3
Relatedness needs	17	4	15	15

