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Research Article

Diabetes Management in Tunisia: Health Professional and Patients Perspectives

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Abstract

Background: Despite of the widening gap between the magnitude of chronic diseases and the health system response, little has been written on the patterns of diabetes care in Tunisia.

Objective: To shed light into practice, experiences and interaction within diabetes care at different levels of care.

Methods: The study took place during 2014 in health care facilities reflecting different levels of care (primary health care and hospital). A three level approach was adopted: a level of conceptualization (by analysis of policy and strategy documents), a level of perception (by interviewing health care providers and patients) and a level of practice (by conducting fieldwork).

Results: Despite of the attempt for strategic redeployment of the first line engaged decades ago, with the process of integrating national diabetes and hypertension programs in all primary health care facilities in the country, diabetes care was seen as not responding to quality standards in studied health facilities. Poor communication and overloaded clinics in hospital were major sources of providers and patient dissatisfaction. Moreover, treatments shortage and lack of laboratory assessments were specifically pointed in primary health care settings, facts that potentially lower its attractiveness.

Conclusion: This is the first study conducted in Tunisia after 2011 appraisal that brought a crossed analysis of different actors (patients and health care providers) in different contexts of diabetes care. Results were in connection with previous studies. The general conclusion was the swamping of our health system, with a sclerotic inflexible first line that still struggle to deal with chronic diseases.

Keywords: *Diabetes Management; Tunisia; Health Professional*

Background

Tunisia, a typical East Mediterranean country is undergoing a rapid demographic and epidemiological change. A growing literature on the burden of NCDs and their risk factors showed that non-communicable diseases (NCD), such as cardiovascular diseases (CVD), cancer, and diabetes, currently exceed by far communicable infectious diseases, in terms of morbidity, mortality and cost [1-6].

As most of the EMR countries, Tunisia had a growing recognition of the enormous burden of diabetes on the health and economy as well [1]. In the early nineties, national plan and clinical guidelines of care for chronic conditions including diabetes and hypertension have been formulated. In the meantime, diabetes prevalence has increased to 52% in the past ten years [2,3] and future projections predict a dramatic rise in this prevalence by 2027 (26.6% by 2027) [4], in case of failure in addressing trends of major risk factors.

Despite the alarming trends, the few existing studies on guidelines implementation highlighted gaps and lack of adherence to good practice recommendations [5-7]. Care purposes are achieved only in quarter of diabetic patients [8] and the care process was the major issue [9].

Original research on the health system and health policy environment, and in particular on the emergent diabetes burden, is in its infancy. This paper aims to fill that gap.

Objectives of the Study

Our objectives were to assess national policies and organizational preparedness for Diabetes management, with a focus on care providers concerns of and diabetic patients expectations concerning their care.

Unusually in the country, this took the form of a qualitative analysis, as we suppose that qualitative methods are likely to be the most relevant to reflect the complexity of health care process.

Methods

This paper is built on a previous examination of the Tunisian healthcare system undertaken within the MedCHAMPS Project in 2010, i.e. immediately prior to the Tunisian revolution (2011), year in which people were asked, amongst other things, about a health system that responds to their needs and expectations.

This study was conducted during May-June 2014, in three health care facilities reflecting different levels of care: (i) the primary level (primary health care (PHC)), (ii) the secondary level (regional hospital), both are located in the third largest city in Tunisia, Nabeul, and (iii) the tertiary level, the National Institute for diabetes (INNTA), the largest reference hospital in diabetology, located in the capital Tunis.

Qualitative methodology used entailed three levels of data collection [10-12]. The first level consisted in analyzing official documents in relation to diabetes management. The second one, intended to undertake a fieldwork in the clinics using a checklist intended to collect data on examination, investigation, lifestyle-change prescriptions. The last aimed at holding semi-structured interviews with health care providers and patients (Figure 1).

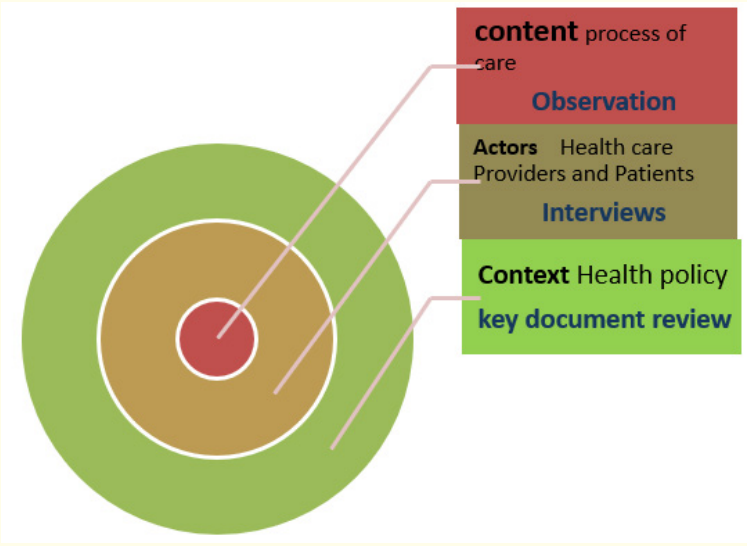

Figure 1: *The three 'levels' of data collection.*

Seven health care providers (HCP): four from the third level (a professor of internal medicine, a nutritionist, a physician trainer and a nurse), and three from the primary level (two general practitioners (GPs) and one nurse), were interviewed concerning their perception, experience and expectation. Moreover, forty patients, randomly selected from the waiting patients, were asked about their level of satisfaction and their experience with the health care providers during their visit to the health facility,

Two investigators conducted the interviews and the field observation, one (NBM) in the hospital and the other (ASM) in the PHC. All interviews were recorded and the participants' verbal consent was taken.

Results

Diabetes management in Tunisia: PHC the corner stone of diabetes care

Tunisian Ministry of Health like most of the EMR countries [13], has implemented an NCDs Management unit within the Department of Primary Health Care to coordinate national programs for hypertension and diabetes aiming at improving quality of care [14]. Program was launched in 1993 and spread to the whole country in 1998. It incorporates standardizing training of primary health care GPs, developing disease registers, and using disease-specific medical records. There has also been an emphasis on the availability of medications for chronic diseases and patients' level of education by introducing weekly chronic disease clinics. At the district level, the NCDs coordinator ensures the implementation of the diabetes program. According to the national program and guidelines, the management of diabetes is mainly procured in PHC where GPs are the gatekeeper. Patients are referred to the second and third level when needed.

However, the scope of the directive is specified to PHC, thus excluding others public and private health facilities. In addition, recommendations were never updated. In order to fill these gaps, a handbook "Tunisian consensus on diabetes Miletus prevention and care" was elaborated in 2009 by learned society. Despite the fact that these recommendations were judged comprehensive, aligned with international standards and designed to be used by both private and public sectors, it had never been officially approved by the ministry of health and could not consequently be considered as national standard of diabetes care.

Process and outcomes of Diabetes care: results from surveyed health facilities

Unexpectedly, our study in practice included only PHC and university hospital, but not regional hospital because of the unavailability of diabetes clinics, this fact was due to the resignation and the long-term leave of the only two specialists contracted with that hospital.

Diabetes management: Providers' perspective

The assessment of the diabetes care quality varied according to the health provider's profile. According to GPs in the PHC, diabetes care was "generally good except that there are many weaknesses to correct and practices to improve, for example the waiting time is very long, the lounges are very crowded". While at hospital, the quality of care was judged bad, "appointments are further apart than it should be (six months instead of three), the blood pressure is not measured in all consultations given the large number of patient by doctor, finally the electrocardiograms (ECG) are not done every year, as well as patient therapeutic education is very difficult " (intern, hospital).

"The main difficulty is the overloading of the consultation; it is mainly the large number of consultations by physician that is vehemently reducing the time spent in each consultation compared with the recommended half hour…" (Specialist, hospital). The problem in the tertiary hospitals is likely to be a structural, one for two reasons: first, patients' behavior, who prefer seeking care at the national reference center and second time pressure owing to patients' large number", these points are considered as the major factors that cause HCP dissatisfaction.

This has seriously affected the process of care in the teaching hospital, as witnessed in the clinic observations; usually the doctor doesn't allow sufficient time to carefully examine patients. Weight was measured for all patients but BMI was not assessed for any one of them. Furthermore, blood pressure was taken only to four among ten patients observed. No patient was asked about smoking habits. All the same, neither psychological complications nor foot examination were recorded for any of the ten.

Lack of resources was pointed out differently according to the context. The educative nurse in the teaching hospital said about her experience in diabetes education "The biggest problem is the lack of resources (no data show, no computer, no educational materials...), in fact I work on my own, I am the one who supports and organizes meetings with my modest means". The Professor highlighted the difficulty cited above "The diabetes education should be audiovisual with scrolling messages carefully selected and adapted to a homogeneous target audience (children, youth, elderly, pregnant women), unfortunately we do not have such resources to do therapeutic education correctly".

While PHC's GP were rather concerned with treatments availability and glycated hemoglobin testing '(…) and do not forget that glycated hemoglobin testing is not always available despite the fact that it is of a primary consideration... we must make new treatments available at clinics". The other GP confirmed that proposal saying "the main difficulty is to obtain efficient treatments for chronic illnesses in clinics".

Overloaded clinics are the main difficulty encountered, but this problem was more stressing in the hospital. the nurse of the teaching hospital spoke of her experience "The main difficulty in my outpatient practice is the clutter that makes the contact with the patient difficult and often leads to conflicts even with the doctor because the nurse's task is to run behind files and spreadsheets at the expense of his alleged role of assisting doctors in taking blood pressure, height and weight….". That was approved by a specialist saying "….we don't get any help from nurses as they are absorbed in tasks they are not supposed to do (bring records, balance sheets, call patients...)". Increasing recruiting of medical and mainly paramedical was common between all proposals, in order to alleviate the workload, and allow nurses assisting doctors in consultation.

PHC's GP focused on nutritional education "we should organize sessions of health education and better involve nutritionists". Unexpectedly, referral to specialists was not seen as a problem to them claiming that they are not facing much difficulty in managing their patients.

Other expectations were raised, specifically to each context of care: In the hospital, doctors inspired to computerize boxes of consultation and medical records, as the specialist suggested "to equip medical consultants with a computer and a printer to computerize patients' records and archive". Concerning education, the intern proposed "I think the presence of an educator nurse will settle many problems in outpatients clinics. Also, educational videos would be more effective than posters especially that patients spend hours in the waiting room. So, we could invest that time in education".

In PHC, proposal of improvement were more basic such providing treatments, Glycated hemoglobin testing and recruiting of nutritionists. The main obstacle to implementing these measures was simply the lack of autonomy in resources management, which is actually centralized at the directory level according to GPs of the PHC. While for the hospital Professor "The budget is available, since hospitals have their own recipes, but allocation of resources is not efficient enough, the hospital is managed by administrators who are not very sensitive and difficult to convince about the effectiveness of technical measures".

Patients perspective

The evaluation of patients' satisfaction was another investigated outcome of care. Patients' dissatisfaction pertained to factors related to their experience with care providers. Some providers were identified as 'Unfriendly providers' "The doctor doesn't even look at me" (patient in teaching hospital). Poor examination was another source of patients' dissatisfaction in the hospital. Here again, clinic observation demonstrated that 80% of the seven- minutes examination (mean duration) was spent in reporting information in the patient file.

In the PHC clinic, communication seems to be relatively better. Consultation per patient lasts 10 minutes on average. Treatment adherence, psychosocial problems and side effects of treatments were systematically assessed, dietary education including physical activity advice were performed. But neither smoking nor drinking habits were discussed. All patients had benefited of a heart and foot exams.

Discussion

To our knowledge this is the first study conducted in Tunisia post 2011 appraisal, it brought a crossed analysis of different actors (patients and health care providers) in various contexts of diabetes care. Our results demonstrated that patient-provider relationship is a matter of major concern. These gaps in the relationship are found out to be related to poor communication and lack of sensitivity and humanity. Potential reasons for that might be the overloading of teaching hospital leading to tense labor relations mood which ensue the provider's dissatisfaction as resoundingly demonstrated in interviews at hospitals. Misuse of PHC clinics may be the factor that stands behind overcrowded hospitals, so the question is to understand the motives that drive individuals to short circuit PHC and consult directly consult hospitals.

In this respect, interviews with GPs highlighted drugs shortage and lack of laboratory assessments as the main facts that certainly lower the attractiveness of PHC.

Our results point to a comparable situation on various elements that were explored by different studies in our region, including a systematic review on quality of care in primary health care setting [9], Findings from this review emphasized that the process dimension of diabetes care is a problematic area in the region, specifically aspects related to clinical practice, patient–provider relationship, as well as resources availability for education, medications and laboratory assessments.

Our findings demonstrated continuity with previous MedCHAMPS findings [15], especially in regard with relationship issues between health care professionals and patients, communication was judged by both counterparts as poor and disappointing, since it was exclusively focused on medical prescriptions, with lack of empathy and compassion health professionals staff.

Some of the patients' complaints were reflected by health providers themselves, who mentioned the pressure they are undergoing. Overcrowded outpatient care does not allow appropriate care for patients in terms of time and quality as confirmed by this current study results and those of MedCHAMPS [15].

Besides relational problems, structural considerations as the lack of functional education-information framework in Tunisian health care settings, is worsening both care outcomes and the sense of non-recognition within patients. We can notice that all these issues are persistent challenges in our health system [16]. Nevertheless, this study does not bring solid arguments to attribute the worsening working atmosphere in health settings to the 2011 appraisal.

Here again, this study showed how much our health system is struggling in tackling health issues related to the transition. This in spite of the attempt of strategic redeployment of the first line engaged decades ago, with the process of integrating national diabetes and hypertension programs in all PHC in the country, giving hope that they will form the platform of an integrated and continuous care for diabetes and chronic diseases [17]. However, important constraints to compliance with referral pathways between first line and hospitals were highlighted. There is an urgent need to address treatments shortage, lack of basic biological testing in primary health care setting, for more effective use of first line in general.

Moreover, shortage of specialists in regions ranks among highly controversial failures of the health system. Our findings allowed us to conclude that the weak link in diabetes care in Nabeul's region was Level II. When needed, patients were directly referred up to third line, compounding the issue of overcrowded hospitals.

Similar findings were reached by Ben Ghobrane., *et al.* who had explored reasons for using emergency departments in teaching hospitals of Grand Tunis area, concluded that patients with serious illness accounted for only 6.3% of those interviewed. For the rest, the main reasons for choosing the emergency department were: speed and ease of access [18]. This was often the case within all the territory, regional hospitals are ineffective, and it is important to strengthen and support them [19].

This aspect of upgrading the functioning of all the structures at all levels is certainly worthy of particular interest. In this context, accreditation of health facilities and evaluation of professional practices based on recognized standards, would be entirely appropriate. In this regard, an Agency for Accreditation and Certification of Health Services (INAS) was established by Decree No. 2012-1709 of 06/09/2012 in Tunisia, and It is operational since 2017 [19].

Some of the expected achievements would be: updating the existing current diabetes program, and establishing an institutional dynamic of continuous performance evaluation, providing technical training and empowerment of PHC's health care providers to adhere to guidelines. This will contribute not only to a more standardized evidence based care, but also to improve patients' satisfaction. Indeed, Gross., *et al.* demonstrated that patients recognize the improved performance characteristics that accompany the adherence to guidelines for diabetes care [20].

Handover the medium to long term, innovative and efficient approaches to reshape diabetes care management should be explored, including interventions using information technologies, which are promising in developed countries [21,22].

Such experience is currently ongoing under the Tunisian smoking cessation strategy, called mobile-cessation program, which is an additional tool for smoking cessation through a series of telephone messages that assist the smoker in the weaning process. This was a pioneering project with the starting phase targeting 3,000 smokers being launched. Many opportunities are provided to Tunisia to ensure the success of such program including high commitment of the three telephone operators and the proven effectiveness of this tool in other countries [23].

In fact, mobile phones are common in Tunisia even among the poorest (91% of the population) and nearly half of mobile phones are connected to internet according to the 2014 census. Specific application or simply text messaging could for the short term overcome the lack of communication from the part of health care providers. Phones can be used as a tool to educate patients about diabetes or simply as a reminder. Furthermore, specific application could have larger function such bio-recording data on blood glucose readings, carbohydrate or calorie consumption, or physical activity [21,24].

Nevertheless, availability, safety, acceptability and accessibility (including reliability) of integrating new technologies in diabetes care context must be investigated, because there may be some hesitation by a healthcare provider or facility in adopting this type of technology [25].

Meanwhile, effective interpersonal communication between health care providers and patients must be supported, by specifically training health care professionals to listening options, and people centered care. Such a model promotes partnership with patients, ensuring consequently early prevention of complications. The effectiveness of such transition from the vertical disease-specific approaches of the past towards integrated care and people-centered approaches been demonstrated very successful in improving patient satisfaction, compliance and health outcomes [26].

Conclusion

In conclusion, the facts are clear: a weak responsiveness of Tunisian health system to the alarming diabetes rise, which threatens both health and economic development especially in this fragile transitional phase. There is an urgent need to address treatments shortage, lack of basic biological testing in primary health care setting, for more effective use of first line in general. In addition, strengthening interpersonal communication between health care providers and patients in outpatient clinics seems to be a priority according to our results. Against this backdrop, some measures are required to reshape diabetes care management, including operationalization of the national health structures accreditation instance, as well as introducing information and communication technologies (ICT), which were proved promising in health education in developing countries settings. Meanwhile, the transition from the vertical disease-specific programs towards integrated care and people-centered approach must urgently be considered as part of major strategic reform of NCD's management.

Finally, there are "virtuous features" in values and attitudes that need to be promoted. It is critical to build trust among all stakeholders: patients, health professionals, authorities and experts. It will pass first through a real dialogue. It was started under the "societal dialogue" whose slogan is "health, a right, a responsibility". This dialogue must be reinforced and sustained at all stages of decision making process, from the implementation to the evaluation of policies, strategies and national health plans.

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