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Patients' Views of Interpersonal Continuity of Care in Four Primary Health Care Centres of Urban Oman

*Mohammed Al-Azri M[1] and Shyam S Ganguly[2]

وجهات نظر المرضى حول الرعاية المستمرة في أربعة مراكز للرعاية الصحية الأولية في حواضر سلطنة عُمان

محمد العزري، شيام جنجولي

الملخص: الهدف: يعتبر استمرار الرعاية الطبية عند نفس الطبيب/الطبيبة ذا قيمة أساسية في الرعاية الأولية وعامل حاسم في نوعية الرعاية . ومع هذا تبقى هذه الاستمرارية بالتعامل مهملة في الدول العربية ومنها عُمان. تهدف الدراسة إلى معرفة آراء المرضى حول ذلك الموضوع في عمان. الطريقة: اختيرت أربعة مراكز صحية أولية من منطقتين حضريتين في عمان بين يونيو وأغسطس سنة 2008. تم استبيان البالغين من المرضى وهم بانتظار دورهم للقاء الطبيب في المركز الصحي الأولي. النتائج: تم إكمال 319 استبيانا (71%) من المرضى المشاركين. كان مدى العمر بين 18 الى 70 سنة. معظم المرضى - 223 (70%) يعتقدون أن مراجعة نفس الطبيب مهم جدا لهم . وشعر 232 (73%) منهم حصلوا على عناية أفضل عند مراجعتهم نفس الطبيب. فضل (225 - 71%) استمرار العلاج عند نفس الطبيب في حالة مشاكل شخصية أو عائلية أو اجتماعية . كان حظ النساء أقل من الرجال في استمرارية مراجعة نفس الطبيب (p = 0.018) . كما وجدنا أن استمرارية العلاج عند نفس الطبيب تزداد بازدياد عدد الزيارات الطبية (p = 0.030) بزيادة العمر يزداد تفضيل استمرار المراجعة عند نفس الطبيب (p = 0.020) . وكذلك في حالة الأمراض المزمنة (p = 0.001) . المرضى المصابون بأمراض مزمنة والذين يفضلون استمرار العلاج عند نفس الطبيب يلتزمون أكثر بنصائح وتعليمات الطبيب مقارنة بالآخرين (p = 0.027) . الخلاصة: المرضى العمانيون يعتقدون أن استمرار العلاج عند نفس الطبيب عامل مهم في الرعاية الصحية الأولية . على ادارة الرعاية الصحية الأخذ بنظر الاعتبار تفضيل الاستمرار عند نفس الطبيب واتخاذ الاجراءات اللازمة لدعم ذلك. من الضروري عمل دراسة تشمل عددا أكبر من المرضى من عدة مراكز صحية أولية في عُمان .

مفتاح الكلمات: استمرار الرعاية عند نفس الطبيب ,رعاية أولية . عُمان.

abstract: ***Objectives:*** Interpersonal continuity of care (consulting the same physician) is widely regarded as a core value of primary care and a crucial component of quality of care. Nonetheless, interpersonal continuity as experienced by patients remains a neglected topic in Arab countries including Oman. The aim of this study was to explore how patients view interpersonal continuity of care in the primary care setting in Oman. ***Methods:*** Four primary health centres (PHCs) were selected from two urban cities in Oman. In the period June to August 2008, adult patients were surveyed by questionnaire at their PHC while waiting to see their primary care physicians (PCPs). ***Results:*** We interviewed 319 (71%) of enrolled participants. Their ages ranged from 18-70 years. The majority of patients (223 - 70%) thought interpersonal continuity was very important for them; 232 (73%) patients felt that they obtained better care with interpersonal continuity. 225 (71%) patients preferred interpersonal continuity if they had personal, family or social problems. Nonetheless, compared to male patients, female patients had less chance to maintain interpersonal continuity (p = 0.018). Interpersonal continuity increased as the number of consultations increased (p = 0.030). Preference for interpersonal continuity was associated with increasing age (p = 0.020) and with the presence of chronic illnesses (p = 0.001). Patients with chronic illnesses, who reported more preference for interpersonal continuity, were also found to be more compliant with medications and committed to carrying out recommended advice compared to patients without such illnesses (p = 0.027). ***Conclusion:*** Omani patients perceived interpersonal continuity as an important aspect of primary care. Health planners should note patients' preference for interpersonal continuity and take visible measures to support it. A larger study is needed to survey more of the PHCs of Oman.

Keywords: Interpersonal continuity; Primary care; Oman.

Advances in Knowledge

1. *This is the first study conducted in Oman to explore patients' views of interpersonal continuity of care (seeing/consulting the same primary care physician) in primary care in Oman.*
2. *The results of this study help to identify that patients in primary care prefer interpersonal continuity.*

[1]Department of Family Medicine & Public Health, Sultan Qaboos University Hospital, Muscat, Sultanate of Oman; [2]Department of Family Medicine & Public Health, College of Medicine & Health Sciences, Sultan Qaboos University, Muscat, Sultanate of Oman.

**To whom correspondence should be addressed. Email: mhalazri@squ.edu.om.*

Application to Patient Care

1. *Improving interpersonal continuity by allowing and encouraging patients to see the same health care professional must be a priority for any future health care plan in Oman.*
2. *Modifying the appointment system by allowing patients to see the same primary care physician will improve interpersonal continuity and hence quality of care in primary care in Oman.*
3. *Interpersonal continuity must be given higher priority for elderly patients and those with chronic conditions (diabetes mellitus, hypertension, asthma, etc.)*
4. *Active measures should be considered to obtain periodic feedback from patients in primary care.*

Continuity of care has been regarded as one of the core values of primary care and as being fundamental to the work of the family physician.[1,2] Interpersonal continuity has been defined as care provided by the same physician most of the time with an ongoing therapeutic relationship between the patient and their usual physician being developed and maintained.[3] Several other types of continuity are also proposed in the literature including team, informational, management, cross-boundary and geographic.[4]

Throughout the world, good quality primary care improves health outcomes for the population.[5] As an element of primary care, interpersonal continuity has been evaluated for the extent to which it impacts on health care outcomes such as prevention or reduction of physical, mental, and social disabilities, increased patient satisfaction, trust and reduced aggregate health care spending.[6] It has been shown that if there is trust between the patients and their usual physicians, patients are more likely to adhere to the recommended treatment.[7]

Oman is a fast developing country located on the south-eastern tip of the Arabian peninsula with total population of 2.75 million in 2007 of which 1.9 million were Omani.[8] In that year, only 3.7% of Omani were over 60 years of age and 36% under 15 years of age.[8] The primary health care services in Oman are funded by the government, through the Ministry of Health (MOH), for all Omanis and non-Omanis working in the government sector.

Since its inception in 1970, the MOH has gradually expanded health care services to all regions of Oman through a network of primary health centres (PHCs) providing high quality services easily accessible to everyone in the country.[9] Primary health care has been considered as the first portal of entry to all levels of health care services. If required, primary care physicians (PCPs) refer their patients to secondary and tertiary care hospitals for specialist care. In 2001, Oman was ranked by the World Health Orgazination (WHO) as first in the world in relation to the efficient utilisation of health services mainly due to the effectiveness of PHC services.[10]

Despite the fact that availability, accessibility, continuity and comprehensiveness of care were considered when establishing primary health care services in Oman,[9] patients are still accustomed to consult any PCP on a "first come first served basis". Nonetheless, since April 2008, an appointment system has been approved and implemented in all PHCs in the Governorate of Muscat, the capital city of Oman.[11] One of the aims of the system is to improve interpersonal continuity, but interpersonal continuity may be interrupted as patients can still consult different PCPs in the same health centre. This might result in patients being given conflicting advice which could affect outcomes of care and hence the quality of services.

Thus, PCPs are faced with a challenge to provide good quality services, including interpersonal continuity. To our knowledge, there are no previous studies conducted in Arabic countries, including Oman, to explore patients' views of interpersonal continuity of care. The aim of this study was, therefore, to explore patients' view of interpersonal continuity of care in the primary care setting in Oman.

Methods

This study was approved by the Medical Ethics Research Committee of the College of Medicine & Health Sciences (COM&HS) at Sultan Qaboos University (SQU). A survey questionnaire was developed using models from the literature,[1] but modified to accommodate the Omani context of primary health care. The description of the survey questionnaire contents can be found in Table 1. The questions were formulated as statements with which the patient could agree or disagree. Patients

Table 1: Description of patient survey contents

Section number	Areas of assessment	Examples of assessment
1	Socio-demographic characteristics of the patient	Age, gender, marital status, education level, history of common chronic illnesses, name of the PHC, duration of registration with the PHC, etc.
2	Patient's perception and knowledge of interpersonal continuity	1. Whether it is important to consult the same or different PCP at every visit 2. When it would be important to consult the same or different PCP 3. The preference between easy access by consulting any PCP or waiting to consult the same PCP 4. The importance of building a good relationship with the same PCP 5. The feelings experienced when consulting the same PCP compared with other PCPs 6. Whether the medical record is sufficient for continuity compared with consulting the same PCP
3	Implication of interpersonal continuity and how interpersonal continuity links to outcomes of care	1. Whether the patient has had the chance to consult the same PCP at every visit or they had to wait a long time 2. Whether the patient will obtain better care by consulting the same PCP 3. Did the patient's condition improve and did he/she feel more comfortable and at ease when consulting the same PCP compared to consulting different PCPs? 4. Is the usual PCP involved with the patient in making decision? 5. Is the usual PCP knowledgeable about the patient's personal, psychosocial and medical background? 6. Is the usual PCP considering psychosocial aspects when making decisions? 7. Are patients becoming more committed to recommended regimens when consulting the same PCP compared to other doctors, etc?

Legend: PHC = primary health centres; PCP = primary care physician

were asked to rank their responses on the following scale between "strongly agree", "somewhat agree", "hard to decide", "somewhat disagree" and "strongly disagree".

The questionnaire was translated into Arabic and then retranslated into English to ensure that the meaning had been maintained. A pilot study of 20 patients was carried out in one of the selected health centres to test the suitability of the questionnaire and highlight any problems that could occur during the implementation of the study.

Three medical students of the COM&HS of SQU were chosen to conduct this study and were trained to perform face-to-face survey interviews. To assure data quality, students were supervised by the principal author during the pilot phase.

Two PHCs were selected from each of the two main cities in Oman: the capital city Muscat and Sohar, which is located in the Al Batinah region of Oman, 240kms north-west of Muscat. The selection of cities and PHCs was based on convenience for medical students to collect data in a specific timeframe. The characteristics of the selected PHCs are outlined in Table 2.

All Arabic speaking patients aged 18 years and above attending their PHCs were invited to participate in the study and the purpose of the study was explained to them. Patients who agreed to participate were asked to sign a consent form and to fill in the questionnaire if they were literate. For illiterate patients, questionnaires were administered by the medical students. Non-Arabic speakers,

Table 2: Characteristics of the selected primary health centres (PHCs)

Location	Muscat		Sohar	
Name of PHC	A	B	C	D
Number of registered patients	38,900	50,600	45,978	42,147
Number of recruited patients	87	129	60	43
Number of working doctors	15	10	13	11

Table 3: Characteristics of participants compared with non-participants

Variables	Participants (n = 319)	Non-participants (n = 131)
Age		
Range (year)	18-70	18-67
Mean (year)	38	34
Median (year)	33	29
Standard deviation (±SD)	9.3	9.5
Gender		
Male	92 (29%)	30 (23%)
Female	227 (71%)	101(77%)
Education		
Illiterate	61(19%)	32 (24%)
Completed primary school	120 (38%)	42 (32%)
Completed secondary school	102 (32%)	47 (36%)
Completed university or postgraduate education.	36 (11%)	10 (8%)

children, and emergency cases were excluded from the study.

Patients were assured of the confidentiality of the data and that their responses would not affect their future management by their PCPs. Non-participants were ask to complete an anonymous demographic information form which included questions on age and gender. Data collection was carried out while the patients waiting to consult their PCPs. The study was conducted in the period June to August 2008.

Data management and analysis were done as follows: proportions, mean, median and other distribution measures were estimated for the variables included in the questionnaire. A score on interpersonal continuity of care was generated from the questionnaire and correlated with all demographic variables using both bivariate and multivariate analyses. Both descriptive and analytical statistics were generated using Statistical Package for the Social Sciences (SPSS), Version 16. In questions with matrix responses, some groups had few responses. Therefore, all of the responses were collapsed to three points by combining "strongly agree" and "somewhat agree" into a single code; "strongly disagree" and "somewhat disagree" were similarly combined. Frequency tables were created for each variable. Cross-tabulations were run where appropriate. Chi-square tests were used to test statistical significance between independent variables (age, sex, presence of chronic illnesses) and dependent variables (patients' responses). *P*-values <0.05 were used to indicate statistically significant associations.

Results

A total of 319 patients participated from the 450 invited (response rate = 71%). Two hundred and sixteen patients (68%) were recruited from Muscat (PHCs A and B) and 103 (32%) were recruited from Sohar (PHCs C and D). The socio-demographic characteristics of the participants compared with non-participants are highlighted in Table 3.

Two hundred and twenty nine patients (72%) thought that it was important to see the same PCP at every visit to the PHC and 241 patients (76%) identified the importance of interpersonal continuity in order gradually to build up a good relationship with the PCP. Indeed, 249 patients (78%) recognised that better care can be obtained by consulting the same PCP; this became more important if they had psychosocial problems (n = 248, 77%) or any chronic illnesses (n = 211, 66%) such as diabetes, asthma or hypertension. Nevertheless 122 patients (38%) had had the chance to consult their preferred PCP over the past two years.

Ninety eight patients (31%) stated that their

Table 4: Agreement according to gender

Item	Gender			*p*-value
	Male (n = 92)	Female (n = 227)	Total (n = 319)	
Have always had the chance to see the same doctor	40 (43.5%)	72 (31.7%)	112 (35.1%)	0.018
Receiving better care by seeing the same doctor	77 (83.7%)	162 (71.4%)	239 (74.9%)	0.033
Important to build-up relationships over time with the same doctor	76 (82.6%)	156 (68.4%)	232 (73.0%)	<0.00

medical record is sufficient to provide continuity in the absence of their PCP and 303 patients (95%) thought that there should be a link between primary and secondary health care services to manage their health problems more effectively.

Female patients were more in agreement with the statement that they had less chance to see the same PCP compared to male patients. They thought that they received less personal care and it was less important for them to build-up relationships with a specific PCP [Table 4].

A significant association was found between patients' ages and their responses. As patients' ages increased both their desire to maintain interpersonal continuity with the same PCP (p = 0.02) and to build-up a relationship with the same PCP increased (p = 0.03) [Table 5].

There was significant agreement between patients with chronic illnesses (diabetes, hypertension, asthma) and without chronic illnesses. Patients who reported suffering from any chronic illnesses preferred to consult the same PCP (p = 0.001); they felt improvement of their conditions when consulting the same PCP (p = 0.043); they were more willing to comply with recommended medications and advice (p = 0.027); they were more satisfied with the quality of services provided at their health care centres ((p = 0.017) and they thought that there should be link between their PHC and the hospital to mange their chronic illnesses (p = 0.024) [Table 6].

Further analysis of the data showed a significant association between patients who reported suffering from hypertension and diabetes compared to those without hypertension and diabetes. Patients who suffered from hypertension thought that their doctors were more understanding of their problems (p = 0.012); they received more personal attention (p = 0.001) and personal care (p = 0.032) [Table 7]. Patients who suffered from diabetes thought that their usual PCPs were more aware of their personal and family background (p = 0.002) [Table 8].

Discussion

In this study, we have explored patients' views of interpersonal continuity of care, an importan subject for comprehensive health care delivery in the PHC set up. To our knowledge there have been no similar previous studies conducted in Arabian countries including Oman. The results from this study show for the first time that the majority of patients in primary care settings in Oman valued interpersonal continuity in order to obtain better care, particularly if they were old, suffering from chronic diseases such as diabetes, asthma, hypertension, or if they encountered psychosocial problems. Nevertheless, female patients had

Table 5: Agreement according to age groups

Item	Age groups				*p*-value
	< 30 (n = 224)	31-50 (n = 81)	> 50 (n = 10)	Total (n = 315)	
Important to see the same doctor	128 (58.2%)	54 (67.0%)	7 (70.0%)	189 (60.6%)	0.024
Important to build-up relationship with the same doctor over the time	157(70.4%)	60 (75.0%)	10 (100.0%)	227 (72.5%)	0.025

Table 6: Agreement according to presence of chronic illnesses (diabetes mellitus, hypertension, asthma)

Item	Total respondents for each item(n)	Total patients with above illnesses (n)	Agreement among patients with above illnesses n (%)	Total patients without above illnesses (n)	Agreement among patients without above illnesses n (%)	*p*-value
Important to see the same doctor	290	62	46 (74.2)	228	148 (64.9)	0.001
Improvement if the same doctor is seen	290	61	43 (70.5)	229	123 (53.7)	0.043
Comply with medications / follow advice if the same doctor is seen	286	58	33 (56.9)	228	104 (45.6)	0.027
Health centre provides high quality care	288	60	32 (53.3)	228	76 (33.3)	0.017
There should be a link between my health centre and hospital	287	60	50 (83.3)	227	214 (94.3)	0.024

less chance to develop interpersonal continuity compared to male patients. We also found that patients who reported more interpersonal continuity also reported more beneficial outcomes such as satisfaction with the services provided, improvement of their conditions and compliance with the recommended medication and advice.

In this study, we found that 72% of the patients perceived that it is important for them to consult the same PCP when visiting PHC. A study in USA found that nearly two thirds of patients in PHC preferred having one doctor to take care of them;[12] another study, also conducted in the USA, reported that over 90% of respondents thought it was very important to have the same PCP to take care of them over time.[13] Indeed, when there is interpersonal continuity, patients usually feel they know the doctor and experience trust, satisfaction and good quality of care.[14] Interpersonal continuity implies empathy and personal responsibility from the doctor as well as commitment by both the patient and the doctor.[15]

Despite most patients' ambitions of interpersonal continuity in this study, only 38% of them had had the chance to consult their preferred PCP over the previous two years; hence, interpersonal continuity was difficult to achieve for some patients who wanted it. The health care system at different PHCs in Oman seems not to support interpersonal

Table 7: Additional agreement of hypertensive patients

Item	Total respondents for each item (n)	Total patients with hypertension (n)	Agreement among patients with hypertension n (%)	Total patients without hypertension (n)	Agreement among patients without hypertension n (%)	*p*-value
Understanding of the usual doctor	309	24	22 (91.7)	285	189 (66.3)	0.012
Attention of the usual doctor	313	29	28 (96.6)	284	204 (71.8)	0.001
Personal care of the usual doctor	313	29	25 (86.2)	284	181 (63.7)	0.032

Table 8: Additional agreement of diabetic patients

Item	Total respondents for each item (n)	Total patients with diabetes (n)	Agreement among patients with diabetes n (%)	Total patients without diabetes (n)	Agreement among patients without diabetes n (%)	*p*-value
Awareness of the usual doctor of personal and family background	309	9	8 (90)	300	110 (37)	0.002

continuity; patients are not allotted to the same PCP when registered and doctors work in shifts which decreases their availability to patients.

The catchments area populations of both Muscat and Sohar are large; each PCP looks after approximately 3,800 patients which could affect their availability to each patient and therefore interfere with providing adequate interpersonal continuity. Indeed, in other countries, some large PHCs have become more like small hospitals with the increases in the numbers of staff, multidisciplinary teams, and specialist clinics.[16,17] Thus, as the primary care organisation becomes more complex and the system impedes patients' access to their usual PCP, personal patient-doctor relationships and interpersonal continuity may decline.[18,19] Nevertheless, an appointment system for consulting a PCP has been introduced recently in all PHCs of the capital area, Muscat.[11] Thus, patients can now select an appointment with a chosen PCP, with whom they feel comfortable and whom they trust so that could promote interpersonal continuity in the future.

The reason for the low rate of interpersonal continuity amongst female patients in our study compared to male patients in our study is not clear. A study conducted in Brazil, on the contrary, showed that being a female patient was associated with high achievement of interpersonal continuity.[20] More research is therefore needed to confirm our current findings.

In our study, older patients and those who suffered from psychosocial or chronic physical illnesses (diabetes, hypertension, asthma) were more in favour of interpersonal continuity than younger patients or patients without such conditions. It has been found that older patients feel unsafe if they are not seeing their usual PCP.[21] Patients with minor problems tend to prioritise speedy access to care over interpersonal continuity.[22] Indeed, in previous studies, interpersonal continuity has been more valued by patients with chronic and psychological problems compared with acute or minor illnesses.[23,22]

Patient with chronic and psychosocial illnesses could consult the same physician frequently which could increase satisfaction, trust and confidence.[24,25] In addition, patients who exhibited satisfaction, trust and confidence were more likely to have had a longer relationship with their providers and hence to believe more in the importance of interpersonal continuity.[26,27]

Our study has the followings limitations. First, the study was conducted in four PHCs out of 165 PHCs of the MOH in Oman which were selected because of their convenience to medical students carrying out the survey. Hence, results might not be representative of the whole Omani adult population and outcomes cannot be extrapolated to the entire primary health system in Oman. Indeed, this limitation becomes more significant when we take into account the fact that approximately 50% of the Omani population is less than 18 years of age and we did not include in our study the parents of children visiting PHCs. Nevertheless, we believe that patients attending these PHCs are not very different from Omani patients in other regions of the country. Therefore, a valid extrapolation of our results to other Omani populations may be feasible. Second, there were more female patients recruited than male; this might be attributable to the fact that the study was conducted in the morning when more male patients are at work. This may have introduced some bias towards female opinions. Third, although the questionnaire has been adapted from literature, the validity and reliability of the questionnaire still needs to be scrutinised. Fourth, we cannot guarantee that that most patients who were recruited for the study attended their PHCs repeatedly and therefore that they could evaluate interpersonal continuity reliably. Finally, although the medical students

were taught to be non-judgmental when collecting data from illiterate patients, we cannot guarantee that their behaviour had no effect on the study outcomes.

Taking into account the effect of interpersonal continuity on improving the quality of care, the MOH in Oman could consider strategies to promote interpersonal continuity. The expansion of the appointment system for patients to consult their PCPs outside the capital city (Muscat) could enhance interpersonal continuity. Patients could then book an appointment with a specific trusted doctor. Indeed, service providers should take steps to help patients to obtain primary care services from doctors they prefer, particularly from someone whom they know and trust. Nevertheless, future strategies of the MOH in Oman could propose that patients should be registered with a specific PCP at their PHCs which could maximize the opportunities for the development of interpersonal continuity. Finally, female patients may have less chance to experience interpersonal continuity than male patients; however, another study is needed to find out why female patients had less chance for interpersonal continuity.

Conclusion

This study showed for the first time that the majority of patients in primary health care in Oman value interpersonal continuity and they want to consult someone whom they know; this tendency becomes more significant if they are old or have chronic illnesses, such as diabetes, hypertension, asthma or psychosocial illnesses.

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CONFLICT OF INTEREST

The authors report no conflict of interest.

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