

Factors affecting quality of care in family planning clinics: A study from Iran

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Abstract

Background. Despite good contraceptive coverage rates, recent studies in Iran have shown an alarmingly high incidence of unplanned pregnancy.

Objective. To determine factors affecting quality of family planning services, a cross-sectional study was performed from June to August 2006 on women visiting urban Primary Health Care clinics in a provincial capital in western Iran. The primary focus of the study was on provider–client interaction.

Method. We used a slightly edited version of a UNICEF checklist and a convenient sampling method to assess quality of care in 396 visits to the family planning sections at 25 delivery points.

Results. Poor performance was observed notably in Counselling and Choice of method sections. In logistic regression analysis, the following factors were found to be associated with higher quality of care: provider experience [OR (odds ratio) = 1.9, CI_{0.95} (confidence interval) = 1.2–3.0], low provider education (OR = 6.7, CI_{0.95} = 4.0–10.8), smaller workload at the clinic (OR = 3.7, CI_{0.95} = 2.0–6.7), and ‘new client’ status (OR = 4.2, CI_{0.95} = 2.6–6.7).

Conclusion. This study identified the issues of counselling and information exchange as the quality domains in serious need of improvement; these areas are expected to be the focus of future training programmes for care providers. Also, priority should be given to devising effective supervision mechanisms and on-the-job training of senior nursing and midwifery graduates to make them more competent in delivering basic family planning services.

Keywords: factors, family planning, Iran, quality

Introduction

There is now a broad consensus among researchers, health educators and health care managers that provision of good-quality family planning services encourages acceptance or continuation of contraceptive use [1, 2]. Moreover, receiving high-quality care is thought to affect the contraceptive and reproductive behaviour of persons who are ambivalent about their fertility intentions, persons who do not use services because of perceptions of poor quality and those who have discontinued use of a contraceptive method because of poor service quality or discourteous treatment by providers. Although a limited number of studies have questioned the link between quality of care and acceptance/continuation of contraception [3], the bulk of evidence from both developed and developing countries shows that high-quality care can be expected to help reduce rates of contraceptive discontinuation and unintended fertility [4–6]. These issues and their

implications in terms of population growth assume particular importance in the less developed parts of the world, where already strained economies are cracking under the combined effects of poverty, overpopulation and inequitable distribution of resources.

Over the last two decades, family planning has been a chief component of Iran’s health care system. The year 1988 witnessed the official revival of the country’s family planning programme (suspended after the 1979 revolution), and the programme’s priority status within the health system was further consolidated by the ratification of the Population Control and Family Planning Bill in May 1994. Since then, rigorous birth control programmes have succeeded in bringing the annual population growth rate from a staggering 3.9% in the early 1980s down to the present figure of 1.1% [7, 8]. Currently, the overall rate of modern contraceptive use is estimated at ~65% in cities and 90% in rural areas [8]. Taking cities and villages together, the highest coverage rate

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(82%) is observed in Tehran Province and the lowest in the Southern provinces of Sistan-Balouchestan and Hormozgan.

In spite of this 'success story', recent studies have shown alarmingly high rates of unintended pregnancy in both urban and rural areas: The Demographic and Health survey in 2000 yielded frequencies of 31 and 34% for unplanned pregnancy in cities and villages, respectively [7]. Taken together, these figures illustrate the need for promoting access to high-quality care in the State-run family planning facilities, and hence improved quality of care is an increasingly important goal for managers of nationwide and regional family planning programmes. The first step in any quality-oriented approach would be an attempt to identify the current flaws and shortcomings in the provision of services, and examining factors associated with poor service quality.

Materials and methods

This study—performed from June to August 2006—involved a survey of urban family planning facilities in the city of E., a provincial capital in the west of Iran with a population of ~750 000. We used a slightly modified version of the checklist developed by the United Nations Children's Fund (UNICEF) to assess the quality of care in 25 primary health care facilities in E. and its suburbs. The checklist was taken from UNICEF's quality assessment manual 'Assessing Quality of Service-Module 6', which is one in a series of publications entitled Primary Health Care Management Advancement Programme. The module has been translated and made available for use in Iranian family planning facilities by the Public Health Department in the Ministry of Health and Medical Education [9]. Our checklist contained 27 yes/no questions categorized into four sections: History taking (nine items), Physical examination (three items), Choice of method (seven items) and Counselling (eight items). Table 1 summarizes the 27 items on the checklist, together with the proportion of visits in which the provider actually conformed to each item.

The 27 items on the checklist were 'checked' by asking the client questions of the type 'Did the staff ask you about your last period?' or 'Did they take your blood pressure?' etc. We assigned a score of 1 for a 'yes' answer, showing that the caregiver had properly carried out the specific activity; a 'no' answer was given a score of nil.

Adding up scores (0s and 1s) from the different items, we calculated a score for each section of the checklist and then added section scores to derive an overall quality score for each visit, in the range of 0–27. This summary measure of quality was then categorized as follows:

Scores of ≥ 24 were labelled 'excellent'

Scores of 19–23 were classified as 'good'

Scores of 14–18 were labelled 'average'

A score falling between 9 and 13 was considered 'poor'

Scores of ≤ 8 were called 'very poor'

Table 1 Items on the quality assessment checklist and the proportion of conformity to each item ($N = 396$)

Items to be checked	Conformity (%)
History	
Client's age	97.0
Current pregnancy	91.4
Cardiac disease	41.2
Liver disease	17.7
Hypertension	30.3
Pelvic inflammatory disease	18.7
Thromboembolic disease	2.8
Current lactation	94.0
Last menstrual period	98.0
Physical examination	
Blood Pressure	68.7
Breast examination	36.4
Checking for signs of anaemia	35.4
Choice of method	
Pregnancy timing (when the couple want a child)	64.9
Present method(s) of contraception	85.4
Client's preferred method(s)	90.4
Consultation with husband/partner	50.5
Offering an appropriate contraceptive method	92.2
Client's acceptance of the method offered	87.9
Referral to a physician (where applicable)	80.1
Education and counselling	
Teaching the use of the method	96.2
Describing common side-effects	67.2
Teaching how to deal with side-effects	56.3
Describing (possible) serious complications	27.0
Arranging follow-up	90.2
Teaching how to discontinue method	72.0
Checking client's understanding of the method	82.1
Allowing time for questions	87.5

For our logistic regression analysis, we dichotomized the overall quality score into the following two categories: scores of ≥ 14 were designated as 'acceptable' and scores of ≤ 13 (less than half of the items done) were called 'unacceptable'.

A preliminary study involving 50 observations yielded a Cronbach's α statistic of 0.87, indicating a good degree of reliability for the entire checklist.

After a brief explanation on the purpose of the research, clients who had given verbal consent were interviewed at the end of their visit by trained interviewers who were not members of the clinic's staff. In order to limit the potential for 'courtesy bias' (the tendency to give socially acceptable

answers), interviews were conducted in a private area of the clinic, out of the earshot of the personnel. We confined the study subjects to clients who were first-time users of contraception methods. These included both women who had been regular visitors to the health clinic over the preceding year (for motives other than birth control), and those who were attending the facility for periods shorter than 1 year or for the first time in their lives. The main reason for this categorization was the desire to examine the possibility that service provided to 'old', familiar clients might have been of a different quality compared with 'new' clients (the latter group may also be more prone to courtesy bias). Service providers were all women.

Using the prevalence rate for inadequate provider performance (64%) reported in a previous nationwide survey [10], we calculated a sample size of 356 for the current study. In practice, we used a convenient sampling method to fill a total of 400 checklists in 25 different service delivery centres, the number of cases in each centre being roughly proportional to its average workload. Four of these checklists were discarded because of incomplete information, and the final analysis—using the software SPSS version 13—was performed with 396 checklists.

For each case we recorded the approximate time of the visit and later categorized this as either within the first 3 hrs of the work shift or afterwards. The division was prompted by the fact that ordinary working hours at State-run family planning facilities are from 8 AM to 2 PM, so the 3-hrs mark actually divides the work shift into equal halves. Another reason for this type of categorization was the common experience that attendance rates are highest at the start and towards the end of the working hours.

Data concerning other variables examined in this study (e.g. provider education and experience, and average clinic workload) were extracted from the statistics and personnel files at the city's Health Authority office.

Provider education was indicated as either 'Below BA' (junior nurses/midwives and nursing assistants) or 'BA and Above' (senior nurses/midwives), a division that produced comparable sample sizes in the two groups (37 vs. 46).

Provider experience was defined in terms of the total number of years spent on the current job, i.e. providing family planning service. This variable was later dichotomized as 'Less Experienced' (<7 years on the current job) and 'More Experienced' (>7 years on the current job), the cutoff point of 7 years being the approximate mean for the entire sample.

The definition of clinic workload was based on the number of clients visiting the family planning section of each clinic: using data on daily attendance rates in summer, we calculated the average number of visits per provider for each clinic and then categorized the service delivery centres as either 'crowded' (client/provider ratio of ≥ 30 , mainly inner city clinics serving densely populated districts) or 'quiet' (each provider serving <30 clients/day). The division was based on a preliminary exploration of average attendance data, showing a more or less bimodal distribution in which a cutoff point of 30 would yield virtually no 'borderline' cases.

Table 2 Means, SD ($N = 396$) and α reliability scores for different sections of the checklist and the overall quality score

Score	Mean	SD	Cronbach's α
History	4.9	1.5	0.81
Physical examination	1.4	1.1	0.86
Choice of method	5.5	1.6	0.82
Counselling	5.7	2.0	0.76
Overall	17.5	4.9	0.87

Table 3 Frequency of different levels of service quality ($N=396$)

Quality of service	Frequency	Percentage
Excellent (≥ 24)	39	9.8
Good (19–23)	154	38.9
Average (14–18)	118	29.8
Poor (9–13)	76	19.2
Very poor (≤ 12)	9	2.3
Total	396	100

Results

This survey involved 396 clients with a mean age of 25.68 years [SD (standard deviation) = 5.76]; these women had an average parity level of 2.67 (SD = 1.73).

Service delivery was performed by a total of 83 providers in 25 different centres. Forty-six providers (55%) had BA or higher degrees, while 37 (45%) had education below BA level.

Overall, 186 (47%) of visits were made in the first half of the work shift and the remaining 210 visits (53%) took place in the second half. As for workload, 251 observations (63%) were made in 'quiet' clinics and 145 (37%) in crowded ones.

Descriptive statistics for the overall quality score and scores from different sections of the checklist—together with Cronbach's α for each section—are summarized in Table 2.

A preliminary analysis revealed that for over 50% of the visits, the quality of service was below the level considered as 'good' (Table 3). The greatest frequency, however, belonged to the 'good' category (36.6%). As for the different components of quality, the worst performance was observed in the 'History' section: complete history was obtained in only 1.3% of the cases, i.e. in >98% of the visits, service providers had failed to ask about one or more history item. In >50% of the cases, the providers had failed to check five or more history items. The most frequently neglected issue in this part was the history of thromboembolic disease (>97%) – a factor that has a major bearing on the decision to use or offer contraceptive pills. Other issues that the providers often failed to enquire about included past or present liver disease (82%), history of pelvic inflammatory disease

(81%) and arterial hypertension in the past (70%). As for the Physical examination, in ~65% of the visits the providers had failed to check for signs of anaemia, and examination of the breasts was omitted in 63% of cases. The 'Choice of method' section emerged as another problematic area, where only 22.2% of the clients received all of the service items on the checklist. Notably, the issue of consultation with the husband was dropped in >50% of the visits. In the 'Counselling' section, the most frequently neglected issues were the serious complications (63%) and the routine side-effects, e.g. spotting for pill users (23%).

Looking at these dismal statistics, we tried to determine what personal and environmental factors could influence the overall service quality and the score on the different sections of the checklist. As the scores had a non-normal distribution, we used a series of Mann–Whitney tests to examine the effects of various factors on quality. The results, summarized in Table 4, are as follows:

Service provider's education had a negative relationship with quality: providers whose education was below BA level achieved higher quality scores both overall and on individual components. The observed associations were statistically significant, except for the Physical examination ($P = 0.523$).

The provider's job experience showed a positive relationship with overall quality and scores from all four sections of the checklist, all reaching statistical significance with the exception of History ($P = 0.16$).

Workload seemed to have an effect on quality: visits in 'quiet' clinics (where the average client/provider ratio was <30 in a day) had significantly lower scores overall ($P < 0.001$) and on Physical examination ($P < 0.001$), Choice of method ($P < 0.001$), and Counselling sections ($P < 0.001$). Only for the History section the association was reversed, but without reaching statistical significance ($P = 0.313$).

The timing of the visits had an impact on quality: those taking place in the first 3 hrs of the clinic's work shift were associated with better overall quality ($P = 0.037$) and higher scores on all the four sections of the checklist. The association was significant for the Physical examination ($P = 0.023$) and Counselling ($P = 0.033$) sections.

It emerged that 'new' clients, i.e. women who had attended the health facility for <1 year received better service overall and in each of the four sections. Except for History ($P = 0.07$), the associations were all statistically significant ($P < 0.001$).

For a more meaningful interpretation of these relationships and to control for possible collinearity between variables, a logistic regression model was fitted to see how factors such as provider education, provider experience, workload, time of the visit and client familiarity affected the probability of receiving service of an acceptable quality. The results from both univariate and multivariate analysis are summarized in Table 5. Looking at the adjusted (multivariate) results, it appears that greater provider experience is associated with better quality, while higher education for the provider, heavy workload, visit after the first 3 hrs of the work shift, and 'old client' status all decrease the probability of receiving adequate service. The associations are all statistically significant—with P -values of <0.01—except for the 'time of visit' ($P = 0.503$).

Discussion

One of the limitations of this study was that our sample size calculations did not take into consideration the intra-class correlation coefficient within the service delivery centres. This was partly due to rather wide variations in the number of clients (workload) between these centres and the difficulty in assigning a meaningful 'average cluster size' for statistical work, and partly because of the fact that data from previous cluster surveys were not available for sample size calculations. However, we have partially offset this shortcoming by increasing the original sample from 356 to 396. Another potential weakness of this study is the fact that some of the items on the checklist may not be applicable to the clients who have already chosen their contraceptive method (e.g. history of thromboembolic disease in a client who is going to use IUD). Although their number is thought to be small—as the study focused on first-time users—the possibility remains that inclusion of such clients may have led to an underestimation of the overall service quality.

The finding that greater job experience for the provider is associated with better quality of care is hardly surprising and has been cited by other authors as well [11, 12]. Of more interest is the odd finding that providers with education at BA level and above (certified nurses and midwives) performed less well than those without BA-level education. Similar results were reported from a major study on IUD use in Iran in which auxiliary (assistant) midwives provided service of better quality—evidenced by lower discontinuation rates—compared with doctors [13].

Looking more closely at the surprisingly poor performance of the more educated providers, we must first remember that the main areas of concern here are history-taking and counselling – given the importance of effective counselling and information exchange in promoting contraception prevalence, choosing the appropriate contraceptive modality and client retention [14, 15]. One major reason for the below-par performance in these sections could be inadequate knowledge and/or a lack of training in communication and counselling skills [16–18]. Senior nurses (with BA or higher degrees) are primarily trained for hospital work (level 2 prevention), whereas education for junior staff is mainly geared for providing primary health care (level 1 prevention). Also, it might be that junior staff members (with their more humble social background) are in a better position to establish good rapport and useful communication with the clients, the majority of whom have a low socioeconomic status. Poor job satisfaction (generated by higher expectations in the face of relatively low salaries) may also have played a role, but further studies are needed to verify this unusual trend and explain its possible reasons.

Apart from the matter of provider education, large studies in Guatemala, Colombia and other Latin American countries have shown that poor provider knowledge concerning contraceptive side-effects is a common problem in developing countries [19, 20]. Likewise, the United Nations Population Fund has identified biased contraceptive information and

Table 4 Results of Mann–Whitney tests examining the effects of the dichotomous variables on the score from the different sections of the checklist ($N = 396$)

Factors studied	Overall quality (mean scores, P -value)	History (mean scores, P -value)	Physical examination (mean scores, P -value)	Method choice (mean scores, P -value)	Counselling (mean scores, P -value)
Provider education: Below BA ($n_2 = 196$) vs. BA ($n_1 = 200$)	21.24 vs. 17.36, $P = 0.001$	6.41 vs. 4.84, $P < 0.001$	1.59 vs. 1.40, $P = 0.523$	6.53 vs. 5.47, $P < 0.001$	1.05 vs. 2.00, $P = 0.049$
Provider experience: ≥ 7 years ($n_2 = 224$) vs. < 7 years ($n_1 = 172$)	18.17 vs. 16.67, $P = 0.002$	5.02 vs. 4.77, $P = 0.16$	1.55 vs. 1.22, $P = 0.003$	5.67 vs. 5.31, $P = 0.036$	5.94 vs. 5.31, $P = 0.002$
Clinic workload: Quiet ($n_2 = 251$) vs. Crowded ($n_1 = 145$)	18.16 vs. 15.75, $P < 0.001$	4.89 vs. 4.96, $P = 0.313$	1.62 vs. 0.82, $P < 0.001$	5.67 vs. 5.08, $P < 0.001$	5.99 vs. 4.89, $P < 0.001$
Time of visit: First 3 hrs ($n_1 = 186$) vs. After ($n_2 = 210$)	18.26 vs. 17.13, $P = 0.037$	5.01 vs. 4.86, $P = 0.516$	1.57 vs. 1.32, $P = 0.023$	5.66 vs. 5.43, $P = 0.213$	6.01 vs. 5.53, $P = 0.033$
Client status: New ($n_2 = 223$) vs. Old ($n = 173$)	18.84 vs. 16.18, $P < 0.001$	5.03 vs. 4.79, $P = 0.07$	1.73 vs. 1.07, $P < 0.001$	5.85 vs. 5.17, $P < 0.001$	6.23 vs. 5.15, $P < 0.001$

Table 5 Logistic regression results showing the effects of the studied variables on the probability of receiving adequate family planning service (overall quality score ≥ 14)

Variables	Univariate estimates		Multivariate (adjusted) estimates	
	OR	CI _{0.95}	OR	CI _{0.95}
Provider experience (More experienced vs. Less inexperienced)	2.1	1.4–3.3	1.9	1.2–3.0
Provider education (No college vs. College)	5.1	2.6–8.0	6.7	4.0–10.78
Workload (Quiet vs. Crowded)	5.4	3.1–9.8	3.7	2.0–6.7
Time of visit (First 3 hrs vs. After)	1.45	0.95–2.2	1.18	0.73–1.92
Client type (New vs. Old)	1.35	0.14–0.34	4.2	2.6–6.7

CI_{0.95}, 95% confidence interval.

inadequate counselling as the main shortcomings observed in the majority of family planning consultations [21]. Our results provide further evidence that the key element in achieving good service quality—especially in the areas of counselling and information—is technical competence and communication skills, rather than formal academic education. The importance of regularly training service providers in counselling, information exchange and interpersonal relations as well as technical matters has been amply corroborated by research in the UK [22], Nigeria [23] and the Philippines [15]. However, the argument in favour of training programmes has been challenged by León, who investigated the effects of introducing a family planning counselling model in Peru. He found that a majority of trained providers did not actually profit from training, and stressed the importance of paying greater attention to trainer–trainee interaction in evaluations [24].

The present study revealed that ‘busy’ clinics rendered services of lower quality compared with the relatively quiet ones, and within both types of facilities, busier hours were associated with poorer service. This negative effect of increasing workload on service quality has been confirmed by a number of other workers [25]. As shown by a study in Morocco, the adverse effect of heavy workload on service quality could go as far as affecting the type of contraceptive method offered to clients, with many health care workers preferring pills over IUDs just because providing the pill requires less work [26].

Our study showed that service given to women who had been regular visitors to the health care facility was of inferior quality compared with the relatively ‘new’ clients. Providers might be taking it for granted that an old client has already received the required information in her earlier visits to other

parts of the clinic and hence are not doing enough to counsel and educate these ‘old’ clients, as inferred by comparing scores on the Method choice and Counselling sections.

Conclusion and recommendations

This study revealed serious flaws in the delivery of family planning care in our urban health care facilities, mostly from inadequacies in counselling and information exchange. There is a clear need for training or retraining providers in the key aspects of family planning, an effort that could take the form of:

- (i) Educating health care professionals (especially college-educated nurses and midwives) in the more practical aspects of primary health care delivery [23, 27].
- (ii) Training physicians and junior-level managers as ‘supervisors’ of service delivery together with devising mechanisms and strategies for effective supervision [28].
- (iii) Attention to communication channels other than verbal exchange, such as publications and audiovisual material. As experienced in other countries, this can have a great impact in enhancing client knowledge, promoting contraceptive use, and dispelling fears and misconceptions [29].

Policy implications

This study identifies major quality components in need of improvement: namely counselling and choice of contraceptive methods. These are expected to become the focus of future on-the-job training and continuous education courses for doctors, nurses, midwives and other health care workers involved in the provision of family planning services.

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