

ORIGINAL ARTICLE

Missed appointments at maternal healthcare clinics in primary healthcare centres in Riyadh city: reasons and associated factors

Adel Almalki

Public health department, General Directorate of Health Affairs, Ministry of Health, Riyadh, Saudi Arabia

Correspondence: Adel Almalki. Address: P.O. Box 37552, Riyadh 11449, Saudi Arabia. E-mail: adsalmalki@hotmail.com

Received: November 24, 2013

Accepted: March 4, 2014

Online Published: March 24, 2014

DOI: 10.5430/jha.v3n4p92

URL: <http://dx.doi.org/10.5430/jha.v3n4p92>

Abstract

Background: The issue of missed appointments at maternal healthcare clinics in primary healthcare centers (PHCCs) has received increasing attention in recent years. The significant relationship between missed appointments and access to maternal healthcare has been recognized around the world. Missed appointments have serious health and economic consequences for women seeking maternal healthcare at PHCCs.

Objectives: The objectives of this research were 1) to critically explore the reasons for and socio-demographic factors associated with missed appointments at maternal healthcare clinics at PHCCs; and 2) to provide recommendations for health policy that might help to eliminate the problem of “no-show” maternal patients.

Methods: Descriptive statistics were used to analyze the responses of 250 women regarding demographics, as well as their reasons for missing appointments and their preferences regarding appointment confirmation at maternal healthcare clinics at five PHCCs in Riyadh, Saudi Arabia.

Results: The most frequent reasons associated with missed appointments reported by women included a lack of supplies and medical equipment, such as ultrasound machines, the unavailability of transportation and a lack of respect from PHCC staff.

Conclusion: Developing easily accessible, flexible, interactive appointment systems with reminder/recall, providing means of transportation, providing training courses to PHCC employees on how to address these women and the provision of necessary medical equipment and facilities, such as ultrasound machines to all PHCCs are highly recommended to reduce the occurrence of missed appointments at maternal healthcare clinics at PHCCs in Riyadh, Saudi Arabia.

Key words

Missed/No-show appointments/Non-attendance, Maternal healthcare, Primary healthcare centers, Riyadh city, Saudi Arabia

1 Introduction

The prevalence of missed clinical appointments is an emerging problem in primary healthcare centers (PHCCs) worldwide. Missed appointments are referred to as no-shows, broken appointments and non-attendance. Numerous empirical studies have reported that when a patient fails to keep scheduled clinical appointments, it leads to severe consequences for the patient's health. In addition, missing appointments jeopardizes all types of medical practices, ranging from maternal practice clinics to general practice clinics^[1-3]. In some medical settings, such as obstetrics, which encompasses pregnancy planning as well as prenatal and postnatal care, missed appointments pose severe health consequences for women both pre- and post-pregnancy.

Saving Mothers' Lives^[4] reported that approximately 20% of pregnant women who died from direct or indirect causes missed more than four routine appointments, actively concealed their pregnancies or did not seek care at all from maternal healthcare clinics. The empirical evidence indicated that delays and failure to seek proper maternal healthcare resulted in the loss of access to the opportunities that early maternal healthcare provides for the mother, baby and family^[4-6].

Regardless of the alarming consequences, thousands of women every year report missing their appointments in primary care settings in general and in maternal healthcare clinics in particular^[7-10]. While the international rates of missed clinical appointments vary significantly according to the types of maternal healthcare clinics, the evidence indicates that women miss their appointments at rates ranging from 2% to 30%, with higher rates for psychiatric^[1] and maternal healthcare^[10].

Nonetheless, a notable gap remains in the available literature related to why women miss their appointments or which categories of women are more likely to miss appointments^[1-10]. Researchers have critically debated a wide range of explanations, including socio-demographic characteristics, where by certain groups have been deemed vulnerable due to the presence of multiple health problems, and economic difficulties as reasons for missed appointments at a maternal healthcare clinic^[1-5, 9, 10].

Furthermore, researchers have argued that people who miss appointments or fail to attend their scheduled appointments are considered nuisances because they are not only causing costs to the healthcare system in terms of extended waiting lists and personnel time, but they are also causing the loss of potentially beneficial services to women in greater need^[7-9]. While missed appointments might be accommodated by many general practitioners (GPs), they are clearly seen as a source of frustration by other women waiting to seek proper maternal healthcare^[9, 10].

Considering the significant gap in the available studies regarding the prevalence of broken or missed appointments, especially at maternal healthcare clinics^[2, 7-10], the current investigation aimed to examine the perceptions of women receiving maternal healthcare in Riyadh, Saudi Arabia.

There were two objectives of this research:

- To critically explore the reasons and socio-demographic factors associated with missed appointments at maternal healthcare clinics in PHCCs;
- To provide recommendations to health decision makers that could help to eliminate the problem of "no-show" maternal patients.

2 Methods and design

The primary method was a quantitative study, while the design was a descriptive analysis.

2.1 Study population and sample

The participants in this study were women aged 15 to 40 years old. A convenience sample of 250 women (both prenatal and postnatal) was included in the study. A list of non-attendees at five PHCCs was retrospectively identified, and these women were considered for enrollment in this research. Non-attending women were defined as women who missed at least one prescheduled appointment prior to their current visit. Two hundred questionnaires were returned and were valid for analysis.

2.2 Instrument

A previously validated questionnaire, created by Alhamad^[11], was used as a reference to create the questionnaire for this study. The questionnaire was available in both Arabic and English so that as many women as possible using maternal healthcare services could participate. The majority of the women who participated spoke Arabic. The questionnaire contained closed-ended questions regarding aspects relevant to the study and collected data on the following topics:

- The respondents' demographic characteristics
- The respondents' reasons for not showing up for their appointments at maternal healthcare clinics
- Factors that might have influenced missed appointments
- Awareness level
- Confirmation methods

2.3 Data collection and analysis

The questionnaires were distributed among the maternal care clinics of five PHCCs (in Alshafa, Alaziziyah, Aleskan, Aldaralbida and Almarwah) from March 10 to April 10, 2013. All the questionnaires were administered by the researcher and were completed by nurses in the maternal healthcare clinics after interviewing each woman. The data were entered and analyzed using SPSS statistics software, version 20 (IBM Corp., Armonk, NY). A descriptive analysis was performed (in particular, frequencies and percentages).

2.4 Ethical considerations

The researcher obtained approval for this study from the five PHCCs prior to conducting the survey. Additionally, verbal consent was obtained from the women regarding participation in the study. The women who participated in this study were assured that there were no penalties with regard to their participation or refusal to participate in the research, and their confidentiality was ensured.

3 Results

3.1 Demographic characteristics of the women

The response rate for this study was 80%. Table 1 presents the basic demographic characteristics of the women who participated in this research.

The majority of the women, 55.5%, were older than 29 years old. In addition, approximately 83.5% of the women were married. A total of 49.5% of the women had attended high school or had received a diploma. Furthermore, 68% of the women self-reported that they had a low socio-economic status.

Table 1. Demographic characteristics of the women

| Item | | N (%) |
|---------------------------------------|----------------------------|------------|
| Age Groups | 15-19 Years Old | 10 (5) |
| | 20-24 Years Old | 28 (14) |
| | 25-29 Years Old | 51 (25.5) |
| | Older than 29 Years Old | 111 (55.5) |
| | Total | 200 |
| Marital Status | Married | 167 (83.5) |
| | Divorced | 21 (10.5) |
| | Widowed | 12 (6) |
| | Total | 200 |
| Number of Children | Zero | 14 (7) |
| | 1-2 | 58 (29) |
| | 3-4 | 67 (33.5) |
| | More than 4 | 61 (30.5) |
| | Total | 200 |
| Educational Levels | Illiterate/Basic Education | 64 (32) |
| | High School Diploma | 98 (49) |
| | University Level | 38 (19) |
| | Total | 200 |
| Employment Status (Self-reported) | Employed | 52 (26) |
| | Unemployed | 148 (74) |
| | Total | 200 |
| Socio-economic Status (Self-Reported) | Low | 136 (68) |
| | Middle | 49 (24.5) |
| | High | 15 (7.5) |
| | Total | 200 |

3.2 Reasons for missed appointments

This section presents an analysis of the most common reasons for missed appointments given by women seeking maternal healthcare at PHCCs. In other words, this section explains why women miss appointments (see the Figure).

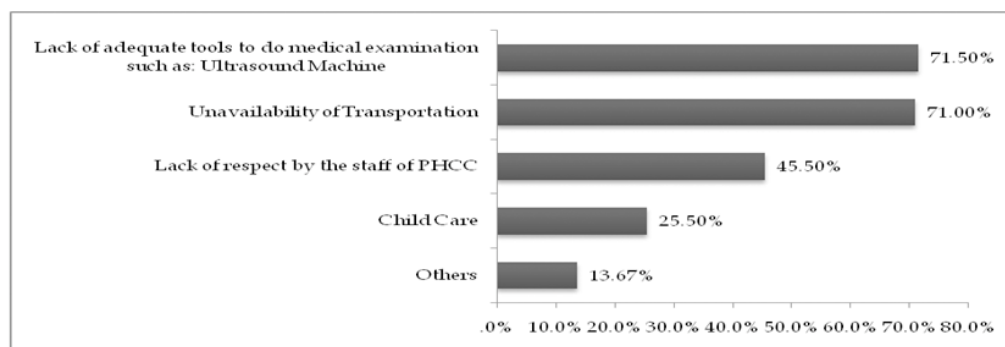


Figure. Reasons associated with missed appointments as reported by the women

The most frequent reasons given for missed appointments among women seeking maternal healthcare were the following: lack of supplies and medical equipment, such as ultrasound machines; unavailability of transportation; lack of respect from PHCC staff; and childcare.

Several other reasons for missed appointments were also reported, such as visiting another healthcare facility, long waiting times at the clinic during a previous experience, work commitments and long-distance travel. Other reasons included not having a companion, forgetting appointments, difficulty in booking appointments, not being well enough to attend, inconvenient appointment times, no need for a checkup/feeling better, loss of medical records from previous experiences and others.

3.3 Factors associated with missed appointments

This section analyzes the factors associated with missed appointments among women seeking maternal healthcare at PHCCs in Riyadh (see Table 2). These factors can facilitate the prospective identification of patients who have a higher risk of missing appointment, which can assist with future planning, including initiating program modifications and formulating strategies to reduce the risk and rate of nonattendance.

Table 2. Factors associated with missed appointments as reported by the women

| Item | | N (%) |
|--|------------------------|------------|
| Trip Duration (minutes) | Less than 30 Minutes | 69 (34.5) |
| | 31-60 Minutes | 89 (44.5) |
| | Longer than 60 Minutes | 42 (21) |
| | Total | 200 |
| Means of Transportation | Dependent | 166 (83) |
| | Independent | 34 (17) |
| | Total | 200 |
| Previously Missed Appointment by Women | Yes | 160 (80) |
| | No | 40 (20) |
| | Total | 200 |
| Women's Satisfaction | Yes | 65 (32.5) |
| | No | 135 (67.5) |
| | Total | 200 |

The majority, 44.5% of the women reported travel durations of 31 minutes – 60 minutes to reach the PHCC. In addition, approximately 83% of the women reported that they were dependent on others for transportation to reach the PHCCs. Additionally, approximately 80% of the women had previously missed their appointments. Furthermore, 67.5% of the women were not satisfied with the maternal healthcare available at PHCCs.

3.4 Awareness levels of missed appointments

This section presents an analysis of the awareness levels of the participants regarding their maternal healthcare and other healthcare services. The descriptive results are illustrated in Table 3.

Table 3. Women's awareness levels of the impact of missed appointments

| Item | | N (%) |
|--|-------|------------|
| Awareness of the impact of missing appointments on their own maternal healthcare | Yes | 84 (42) |
| | No | 116 (58) |
| | Total | 200 |
| Awareness of the impact of missing appointments on healthcare services | Yes | 91 (45.5) |
| | No | 109 (54.5) |
| | Total | 200 |

Approximately 58% of the women were not aware of the impact that missing appointments had on their maternal healthcare. Similarly, approximately 54.5% of the women were not aware of the impact of missing appointments had on healthcare services.

3.5 Confirmation preferences of women

This section analyzes the confirmation preferences of the women. The descriptive results are illustrated in Table 4.

Table 4. Confirmation of women's preferences

| Item | | N (%) |
|--|--------------------|------------|
| Reminder Regarding Confirmation of Appointments | Yes | 193 (96.5) |
| | No | 7 (3.5) |
| | Total | 200 |
| Preferred Appointment Reminder Confirmation Method | SMS | 164 (82) |
| | Emails | 7 (3.5) |
| | Mobile/Phone Calls | 29 (14.5) |
| | Total | 200 |

Approximately 96.5% of the women reported that they would like to receive a reminder and confirmation of their appointments. Similarly, approximately 82% of the participants indicated SMS as their preferred method of appointment confirmation.

4 Discussion

The most frequent reasons associated with missed appointments reported by the women in this study included lack of supplies and medical equipment, such as an ultrasound machine, at the clinic; unavailability of transportation; and lack of respect from the PHCC staff. Other reasons included lack of child care; visiting another healthcare facility; long waiting times at the clinic during a previous experience; work commitments; and long-distance travel. Less frequent reasons included forgetting the appointments, difficulty in booking appointments, not being well enough to attend, inconvenient appointment times, no need for checkups/feeling better and loss of medical records from previous experiences. These results were found to be highly consistent with the findings of previous studies conducted in the KSA, UK and USA [2, 6, 10], which indicated that a lack of supplies and medical equipment, unavailability of transportation and a lack of respect from the PHCC staff were the most frequent reasons that women gave for missing their appointments.

Supplies and medical equipment at PHCCs are essential for regular checkups and for the treatment of women seeking maternal healthcare at PHCCs, and the lack of such as these resources can seriously disrupt the regular access and adherence of women. This finding indicates that maternal healthcare clinics at PHCCs had insufficient facilities for women, which ultimately prevented the women from attending their appointments. The results indicated that the women were generally dissatisfied with the available healthcare facilities at the PHCCs of Riyadh, Saudi Arabia.

Another explanation for missed appointments is the patient's attitude. Some patients wanted to be referred to the hospital because they believed that good medical services could only be obtained in hospitals. They considered hospital doctors to be more skilled, and hospitals typically have sophisticated equipment and modern facilities. They assume that PHC doctors are general practitioners with less experience and less refined technology [24]. Accordingly, the women preferred follow-up appointments during pregnancy in private health centers if they were able to pay for their services. Their second choice was to be referred by their PHC to a public governmental hospital, thereby putting pressure on secondary healthcare services and leading to crowded ERs.

This finding was supported by Khan *et al.* [7] and Alhamad [11], who found that the status of healthcare services was extremely poor at PHCCs in Riyadh and that women did not receive basic maternal healthcare, such as ultrasound, which can effectively help to assess the patient's condition during both the prenatal and postnatal stages. As a result, this deficiency not only affects women's health but also their motivation to attend their appointments and their satisfaction with their care [6, 10-11].

Moreover, the unavailability of transportation suggested that women had significant difficulties related to regular transportation to the PHCCs. Considering that the transportation system in Saudi Arabia is solely based on private vehicle transportation [7] and that driver's licenses and permission to drive are allowed only to adult men [11], women find it difficult to reach PHCCs, especially women who are divorced or widowed or who have no companions. Furthermore, for unemployed women, the cost of personal drivers and taxis is relatively expensive. It is also sometimes not socially acceptable for women in Saudi Arabia to use taxis or personal drivers without permission from their husbands and without the company of chaperones [7, 11]. The unavailability of transportation, indicated by women as a reason of their missed appointments, suggests that public transportation is not sufficiently developed in Riyadh and is not used for all transportation needs within the city [11].

The unavailability of transportation also indicated a number of other interrelated reasons for missed appointments, including financial difficulties, which could restrict women from regularly paying for their transportation expenses to attend their maternal healthcare appointments. While Al-Shammari [13] and Mohamed and Al-Doghaiter [14] asserted that financial difficulty or economic constraints were irrelevant in terms of access to healthcare, as well as the cost of healthcare, because the services of Saudi government hospitals are free, many other researchers have suggested that low socio-economic status among Saudi women would eventually indicate their poor financial resources, their lack of access and availability to transportation and the limited affordability of maternal healthcare [12-14]. Moreover, the unavailability of transportation has been linked with other factors, such as traffic jams, during which women find it extremely difficult to obtain transportation, considering that Riyadh is large, highly crowded and quickly growing [12, 13].

The perception of a lack of respect from PHCC staff was also an important factor, indicating that women seeking maternal healthcare at PHCCs in Riyadh were dissatisfied with the staff's behavior and their treatment by PHCC staff, as confirmed by Al-Shami [15]. Furthermore, Bech [16] suggested that there were significant insufficiencies in the training among the PHCC staff, which deterred women from appearing for their scheduled appointments or caused them to show up later on the same day when other staff was available. George and Rubin [16] proposed that providing training to the PHCC staff to address women would likely improve the women's satisfaction levels and correspondingly reduce the rates of missed appointments. Further, Gordon *et al.* [17] highlighted that a lack of respect from the PHCC staff toward women receiving maternal healthcare indicated that the PHCC staff, including both doctors and nurses, was not properly trained to address women, which caused serious dissatisfaction among women and correspondingly reduced the likelihood of their adhering to appointments for maternal healthcare at PHCCs. Similarly, Houweling *et al.* [18] revealed that women receiving maternal healthcare were highly sensitive to psychological healthcare issues, and thus, disrespect from the staff not only affected their regular visits to PHCCs and adherence to appointments, but it also impacted their maternal healthcare.

Some other reported reasons for missed appointments were a lack of child care, visiting another healthcare facility and long waiting times. These reasons indicate that women with daily responsibilities such as child care might find it difficult to adhere to clinical appointments, suggesting that providing child care support to such women would improve their attendance of maternal healthcare appointments [15-17]. Visiting another healthcare facility and long waiting times are both relevant to the satisfaction of women. These findings indicate that women normally missed their scheduled appointments when they had access to better healthcare facilities. These findings also suggest that women missed their appointments when they were not respectfully treated by healthcare staff [19]. Moreover, work commitments, long-distance travel and not having a companion were some of the other reasons reported by women. Work commitments are usually related to the daily responsibilities of women [18] and present a particular obstacle for women who are employed [20]. In contrast, long-distance travel indicated that the participants lived far away from the location of a PHCC [19].

The results of this research also indicated that women were aware of the healthcare consequences associated with missed appointments. Other reasons and factors associated with missed appointments were stronger than the awareness of the women about the impact of this problem on their healthcare. Moreover, the participants were unaware of the impact of missed appointments on the healthcare services of PHCCs. It is, therefore, apparent that enhancing awareness levels of the impact of missed appointments on healthcare services should be considered as a pragmatic solution to this problem.

Another pragmatic solution for reducing the occurrence of missed appointments among women is to contact them to confirm their appointments. This step could be undertaken by informing the women the day before their appointments^[19-21]. In addition, women seeking maternal healthcare suggested that they preferred to receive confirmation of their appointments as reminders via SMS messages to their mobile phones to encourage attendance of their maternal healthcare appointments^[22, 23].

5 Conclusions

This paper concluded that the top three reasons associated with missed appointments at maternal healthcare clinics in PHCCs in Riyadh were: a lack of supplies and medical equipment, such as ultrasound machines, at the clinic; the unavailability of transportation; and a lack of respect from the PHCC staff. The research suggests that improving maternal healthcare clinics will likely reduce the rate of missed appointments. In addition, improving the transportation to maternal healthcare clinics and providing means of public transportation will likely reduce the rates of missed appointments among women seeking maternal healthcare at PHCCs.

In conclusion, developing an easily accessible, flexible, interactive appointment system with reminder/recall, providing means of transportation, providing training courses for PHCC employees on addressing the women, providing women with health education sessions and ensuring the provision of essential medical equipment in such situations are highly recommended solutions for reducing the occurrence of missed appointments at maternal healthcare clinics in PHCCs in Riyadh, Saudi Arabia.

6 Limitations and future research

There were several critical challenges in this study, which were not managed properly because of limitations on the time and resources available to the researcher. These limitations included the limited sample size and data collected from the five PHCCs in Riyadh. It was also assumed that although the women in this study provided reliable and valid data, the participants were not a representative sample of the whole population of women seeking maternal healthcare in PHCCs, hence limiting generalizations about the causes of missed appointments in PHCCs. In addition, there were limitations related to concerns regarding the confidentiality and anonymity of the women of this research. Although confidentiality was ensured and protected, some of the women might have chosen to be less candid or might have been reluctant to provide honest responses, which could have skewed the results with uncontrolled bias. In Saudi Arabia, the primary healthcare centers are segregated into two departments; there are different departments for men and women. For this reason, there were some constraints and difficulties, as men could not interview women. Notwithstanding these limitations, this research provides opportunities for additional study. For example, the exploratory nature of the research provides a good opportunity for testing some of the findings in larger samples of women who have missed maternal healthcare appointments.

Permission to use the data

Use of the data was authorized by the administrative boards of the five PHCCs.

Conflict of interests

The author declares no conflict of interests.

References

- [1] Perron NJ, Dao MD, Kossovsky MP, Miserez V, Chuard C, Calmy A, *et al.* Reduction of missed appointments at an urban primary care clinic: a randomized controlled study. *BMC family practice*. 2010; 11(1): 79. <http://dx.doi.org/10.1186/1471-2296-11-79>
- [2] Kalb LG, Freedman B, Foster C, Menon D, Landa R, Kishfy L, *et al.* Determinants of Appointment Absenteeism at an Outpatient Pediatric Autism Clinic. *Journal of Developmental & Behavioral Pediatrics*. 2012; 33(9): 685-697. <http://dx.doi.org/10.1097/DBP.0b013e31826c66ef>
- [3] Paige L, Mansell W. To attend or not attend? A critical review of the factors impacting on initial appointment attendance from an approach-avoidance perspective. *Journal of Mental Health*. 2012; 22(1): 72-82. <http://dx.doi.org/10.3109/09638237.2012.705924>
- [4] CEMACH. Saving Mother's Lives: Reviewing maternal deaths to make motherhood safer – 2003-2005. London. Confidential Enquiry into Maternity and Child Health (CEMACH). 2007.
- [5] Norris JB, Kumar C, Chand S, Moskowitz H, Shade SA, Willis DR. An Empirical Investigation into Factors Affecting Patient Cancellations and No-Shows at Outpatient Clinics. *Decision Support Systems*. 2012. <http://dx.doi.org/10.1016/j.dss.2012.10.048>
- [6] Murphy E, Mansell W, Craven S, Menary J, McEvoy P. Pilot Study of an Investigation of Psychological Factors Associated with First Appointment Nonattendance in a Low-Intensity Service. *Behavioral and Cognitive Psychotherapy*. 2012; 1(1): 1-12. <http://dx.doi.org/10.1017/S1352465812000811>
- [7] Khan AR, Lateef ZNAA, Al Aithan MA, Bu-Khamseen MA, Al Ibrahim I, Khan SA. Factors contributing to non-compliance among diabetics attending primary health centers in the Al Hasa district of Saudi Arabia. *Journal of Family and Community Medicine*. 2012; 19(1): 26. <http://dx.doi.org/10.4103/2230-8229.94008>
- [8] Ootes D, Buijze GA, Ring D. Predictors of missed appointments in prospective hand surgery research. *Hand*. 2012; 7(2): 177-180. <http://dx.doi.org/10.1007/s11552-012-9411-7>
- [9] George A, Rubin G. Non-attendance in general practice: a systematic review and its implications for access to primary health care. *Family Practice*. 2003; 20(2): 178-184. <http://dx.doi.org/10.1093/fampra/20.2.178>
- [10] Cormick G, Kim NA, Rodgers A, Gibbons L, Buekens PM, Belizan JM, *et al.* Interest of pregnant women in the use of SMS (short message service) text messages for the improvement of prenatal and postnatal care. *Reproductive health*. 2012; 9(1): 9. <http://dx.doi.org/10.1186/1742-4755-9-9>
- [11] Alhamad, Z. Reasons for missing appointments in general clinics of primary health care center in Riyadh Military Hospital, Saudi Arabia. *Int J Med Sci Public Health*. 2013; 2(2): 256-265. <http://dx.doi.org/10.5455/ijmsph.2013.2.256-265>
- [12] Walker, L. The right to health in Saudi Arabia 'Right to health in the Middle East' project, Law School, University of Aberdeen, General Comment No.14 E/C.12/2004/4, at para 21, supra n 25 <http://www.abdn.ac.uk/law/hhr.shtmlDraft> May 2009
- [13] Al-Shammari S. Failure to keep primary care appointments in Saudi Arabia. *The British Journal of General Practice*. 1991; 41(348): 301.
- [14] Mohamed BA, Al-Doghaither AH. Missed appointments at public hospitals in Riyadh, Saudi Arabia. *Saudi medical journal*. 2002; 3(4): 388-392.
- [15] Al-Shami N. Identification of Factors Associated with Postpartum Depression among Saudi Females in Riyadh City. Doctoral dissertation, University College. 2010
- [16] Bech M. The economics of non-attendance and the expected effect of charging a fine on non-attendees. *Health Policy*. 2005; 74(2): 181-191. <http://dx.doi.org/10.1016/j.healthpol.2005.01.001>
- [17] Gordon M, Antshel K, Lewandowski L, Seigers D. Economic grand rounds: predictors of missed appointments over the course of child mental health treatment. *Psychiatric Services*. 2010; 61(7): 657-659. <http://dx.doi.org/10.1176/appi.ps.61.7.657>
- [18] Houweling TA, Ronsmans C, Campbell OM, Kunst AE. Huge poor-rich inequalities in maternity care: an international comparative study of maternity and child care in developing countries. *Bulletin of the World Health Organization*. 2007; 85(10): 745-754. <http://dx.doi.org/10.2471/BLT.06.038588>
- [19] Khan TM. Interventions during pregnancy to lower the chances of postnatal depression among women from the Asian subcontinent. *Mental Health in Family Medicine*. 2011; 8(1): 7. PMID: 22479287.
- [20] Mitchell AJ, Selmes T. Why don't women attend their appointments? Maintaining engagement with psychiatric services. *Advances in Psychiatric Treatment*. 2007; 13(6): 423-434. <http://dx.doi.org/10.1192/apt.bp.106.003202>
- [21] Nour EDM, Al-Shakhs FN, Al-Oudah SS. Missed appointments at a university hospital in eastern Saudi Arabia: magnitude and association factors. *The Journal of the Egyptian Public Health Association*. 2008; 83(5-6): 415.
- [22] Ulmer T, Troxler C. The economic cost of missed appointments and the open access system. *Community Health Scholars*. 2006.
- [23] Walker L. The right to health in Saudi Arabia. 'Right to health in the Middle East' project, Law School, University of Aberdeen. 2009.
- [24] Harrison KA. Approaches to reducing maternal and perinatal mortality in Africa. In: Philpott RH, editor. *Maternal services in the developing world - what the community needs*. London: Proceedings of the Seventh Study Group of the Royal College of Obstetricians and Gynaecologists; 1979. Sep, p. 58.