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Womens' opinions on antenatal care in developing countries: results of a study in Cuba, Thailand, Saudi Arabia and Argentina

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Background

The results of a qualitative study carried out in four developing countries (Cuba, Thailand, Saudi Arabia and Argentina) are presented. The study was conducted in the context of a randomised controlled trial to test the benefits of a new antenatal care protocol that reduced the number of visits to the doctor, rationalised the application of technology, and improved the provision of information to women in relation to the traditional protocol applied in each country.

Methods

Through focus groups discussions we were able to assess the concepts and expectations underlying women's evaluation of concepts and experiences of the care received in antenatal care clinics. 164 women participated in 24 focus groups discussion in all countries.

Results

Three areas are particularly addressed in this paper: a) concepts about pregnancy and health care, b) experience with health services and health providers, and c) opinions about the modified Antenatal Care (ANC) programme. In all three topics similarities were identified as well as particular opinions related to country specific social and cultural values. In general women have a positive view of the new ANC protocol, particularly regarding the information they receive. However, controversial issues emerged such as the reduction in the number of visits, particularly in Cuba where women are used to have 18 ANC visits in one pregnancy period.

Conclusion

Recommendations to improve ANC services performance are being proposed. Any country interested in the application of a new ANC protocol should regard the opinion and acceptability of women towards changes.

Background

In 1995 the World Health Organization set up a randomized controlled trial to test the effectiveness and efficiency of a new antenatal care model (ACM) in four developing countries. 24678 women were involved in the trial, 12568 in the new ACM and 11958 in the previous ACM. The main characteristics of the new protocol were the reduction in the number of visits with an evidence-based set of contents, and the provision of accurate information to women to identify warning signs and encourage preventive behaviour [1]. The trial was taken as a base to carry out two series of studies parallel to the main evaluation: one to assess women and providers' perceptions and another to study the economic implications of the new trial.

A quantitative second stage of this study consisted of two surveys (one with women and another with providers), whose results have already been published [2]. The present paper reports the women's overall perceptions and views about reproduction, pregnancy, and health care. It also adds to our understanding of the ways that changes in the organization of health services can influence demand and utilization by the population.

The trial was carried out to test the hypothesis that a modified protocol of care containing a substantial reduction of visits and an expansion in the amount of information provided by health personnel could not modify clinical indicators and levels of satisfaction from both providers and users, but could allow saving resources. Within the trial, care was provided by current staff (mainly doctors) and only in Thailand midwives were involved. The literature reports contradictory judgments about the benefits of reducing the number of visits in antenatal care [3-6]. Particularly the opinion of women around this issue does not seem to support the idea that the reduction will

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be considered favourably [7]. No doubt such a change should be accompanied by a set of actions aiming at reassuring women about the positive impact of the reduction particularly when the possibility of making a better use of available resources can be achieved.

The aim of the present article is to describe women's opinions regarding some issues related to antenatal care services in the four countries where the new model was implemented. These opinions are interpreted within a framework of culturally related views about pregnancy and health care in each country. The focus of the paper highlights cultural-social issues as determinants of opinions and behaviour towards the programme over socio-economic aspects. There are two basic reasons to do this. First the programme was set up not to improve access but to introduce modifications to improve efficiency. Lack of access is clearly related to the socio-economic condition of certain groups of population, and efficiency mainly to the re-allocation of resources which imply considering the way users are better served. The second reason is that a reduction in the number of visits and an improvement in the type of information provided to users, may imply changes in the way women emotionally and symbolically regard the service which is a feature that can be found in a cultural type of approach even though the socio-economic position could be at the foundation of it. The number of ANC visits varied among countries. Cuba decreased its number from 18 to 6, Argentina from 7 to 5, Thailand from 7 to 4 and Saudi Arabia from 5 to 4. Policy recommendations should also be addressing cultural issues over socio-economic ones.

The paper is based on information obtained from women involved in the trial, both in the experimental and the control arms, in four cities (Havana, Cuba; Khon Kaen, Thailand; Rosario, Argentina and Jeddah, Saudi Arabia). Information was obtained using a qualitative technique, namely focus group discussions. Three aspects of antenatal care are discussed: a) the concepts and perceptions that women have about pregnancy and the needs those women may manifest during this period, b) the organizational characteristics of the health services where women receive antenatal care, and c) the opinions about the new ANC protocol. The first two topics are considered contextual in that they offer a framework of concepts about health/illness, pregnancy and health care which are relevant to understanding the third one, their opinion about the particular programme in which they were involved.

Methods

Twenty four focus group discussions involving 164 women were carried out to collect the information that is presented in this paper. Discussions were guided by a standardised and detailed list of issues [10]. These general topics about health-care provision and prenatal programmes were addressed in order to gain initial understanding of the way health care is perceived in each specific cultural context. In the composition of the groups two issues were considered to produce variation in the responses, age and parity (Table 1). All women participating in focus groups were pregnant and the criteria for selecting them was after having completed two ANC visits either in the traditional or modified protocol. All focus groups discussions were carried out during the time when the trial was taking place. It is worth noting that the way focus groups were run varied between countries according to the participation of women, the places available to carry out sessions, and to the respect of cultural norms. The way that women took part in the groups differed between the four countries. Women's involvement was very intense in Cuba and Argentina. Particularly in Cuba, women were very talkative and always wanting to provide all the information possible, even beyond the scope of the questions. In Thailand and Saudi Arabia women participated in a less intense way. Focus groups were carried out away from the health centres, in libraries, parks or women's houses, except in Saudi Arabia. In this country, all the focus groups took place within the health centres in private sessions because a woman needed her husband's permission to leave the health centre.

[Table 1.](#) Characteristics of women participating in focus groups in all countries

The methodology was adjusted also to deal with language issues. The original set of questions for the focus groups was written in Spanish. They were initially tested in the field in Cuba and

Argentina. Then a translation was made into Thai and Arabic and adapted to Cuban and Argentinean Spanish in order to apply as accurate as possible a set of questions. Tape recording and notes from focus groups in Thailand and Saudi Arabia were transferred to computer files and translated into English. Translation was made by a person chosen by the local coordinator as fluent in both languages. Recordings from Cuba and Argentina were transferred to computer files in Spanish. The final translation to English of these two latter countries was made by the article's first author. Multiple translations opened the risk of misinterpretation. To avoid this effect in the writing of this article, all local researchers were asked to give their opinion about the selection of quotations and to check that the meanings in the English translation were the same as in the original language.

Focus groups were carried out one year after the beginning of the trial in every country and conducted by social/health researchers with experience in the application of these methodologies. Within the groups, the variety of opinions about the topics researched were tried to be obtained. Coordinators tried to provoke the interaction searching for the diversity of opinions and not necessarily to obtain consensus at the end [6]. Researchers made very clear to participants that all the information provided would be kept confidential and would in no way influence the care received at the health facility. The development of rapport was crucial to avoid the effects of courtesy bias and professional authority, especially present in developing countries. Following a basic premise of qualitative research, we avoided establishing an *a priori* defined sample size for the focus group discussions. Instead, researchers established the final number of encounters based on the 'theoretical saturation' point [8]. It is important to say that some other practical aspects also influenced the definition of the final number of focus groups such as the already mentioned difficulties of Saudi women to move without the spouse's authorisation or the problems that women in Khon Kaen faced to find timely transportation. Thus, the number of focus groups and participants differ among countries.

Information in computer files was later systematised using Ethnograph. Generic and specific codes were defined by researchers in each country to identify the wide variety of topics that women mentioned as relevant to the construction of explanations. Pieces of information were selected to illustrate women's views. In each country the basic themes of culturally-related interpretations of illness, experiences with health-care provision, experience of antenatal care and other relevant features were explored. The assessment of antenatal care experience is considered in the present paper as the final goal of our interpretation.

Results

This section reports the results of focus group discussions in all four countries. The first two topics covering broad issues on pregnancy and care considered the opinion of all 164 women involved in focus group discussions while the third topic assessing the specific performance of the new antenatal care model considered the opinion of 79 women included in the intervention branch of the trial.

Table 1 shows information about women participating in focus groups in all countries. All of them attend the same health care unit in each country and belong to fairly homogeneous socio-economic strata. In Cuba women lived in the surroundings of the clinics, most of them had a high level of literacy and were working in offices, schools and hospitals (70%). In Thailand women were living both in the countryside near Khon Kaen and in the urban area around the health unit. Most Thai women were housewives (40%) and their husbands worked in the fields, or had different low skilled occupations. Argentinian women lived in low class neighbourhoods and their husbands were industrial workers, mechanics and other low skilled activities. Most Argentinian women were housewives (40%) and some of them worked as industrial workers (35%). Saudi women were married to technicians, businessmen, or professionals; they belonged to middle class groups being most of them housewives (80%).

Concepts about pregnancy and health care (See Table 2)

Cuban women identified pregnancy as a normal experience, which should not be regarded as a disease or a pathological state. Even though women consider pregnancy to be a normal period in their life cycle, they agree that their bodies, feelings and behaviour can undergo several changes and that a woman's age is an important factor that can modify the way these changes are experienced. For Cuban women, the best age to be pregnant is between 20 and 30. From their point of view, if women are younger than that, they are immature not only physiologically but also psychologically. On the other hand they expressed the view that young women are physically better able to go through pregnancy than older women. According to their view, changes during pregnancy demand an understanding reaction from those around them, especially from their partners and relatives. One woman said: "There are many people supporting me now, but my husband is fundamental because he is the father. I want him to love the baby like he loves me. I want him to feel the same sensations I am feeling". The need for understanding also includes health personnel. Some women report conflicting feelings of happiness for being the carriers of a new life while having to go through pregnancy in conditions which are not ideal for them, sometimes because their partner is not around or because they do not have enough money to support the new child. Women identified diseases associated with pregnancy. Particularly important for them are "vaginal infections provoked by bacteria or viruses". Some of them were able to mention the names of the infectious agents and the ways of transmission. This information has clearly been taken from providers and the handling of concepts and the description of processes is reasonably accurate in technical terms. As one woman put it, "Current infections during pregnancy are normally provoked by vaginal parasites. Doctors test for them. Vaginal discharge exudates could be positive or negative if women have or have not monilias, trichomonas, and Chlamydia or itching and secretion".

In Thailand, the commonly expressed opinion of women was that pregnancy is a special period in the lifecycle of a woman which should happen when women are around 20 years old. As a woman stated, "at 20 you are an adult and can take responsibility for the baby's care". Younger ages are not good since women are not physiologically and emotionally ready to have children. Older years produce risks for the health of the woman and the child. Pregnancy makes women change a variety of health-related behaviours including types of food consumed, exercise and smoking. For example, there is a specific culturally-defined prohibition on eating certain foods during pregnancy though not all women follow this cultural rule. One woman said that: "I don't eat eggs as I'm afraid the baby will have a bad smell". Pregnancy also changes women's moods and personality, making women more irritable and moody. They also stress the need for special emotional care, particularly from their husbands and mothers. They see the role of partners as very important, though most women referred to difficulties in obtaining men's attention because of various reasons, some related to the personal relationship with the husband and some related to the men's working activities. Another culturally-defined custom referred to by women was that men should stop working in order to be near the woman from the final stages of pregnancy until some days after the delivery, but this is not followed by all men. Women's descriptions of problems during pregnancy mainly referred to the symptoms they experience and not to particular diseases. None of them referred to pathological agents as the cause of these symptoms. The most common symptoms mentioned were vaginal itching, white discharge, frequent urination, "morning sickness", headaches and fever.

The framework of concepts about pregnancy and care among Saudi Arabian women can be characterised as composed by both religious and experiential elements. Of the first type are basic concepts such as the general origins of disease or general health conditions. Women can identify a variety of symptoms like fatigue, dizziness, and tiredness all related to the fate human beings have to experience as a consequence of God's will. The main human expression of disease is pain and suffering. Human beings are always at risk of contracting a disease and suffering pain. However disease is not seen as a punishment from God but as a test for human beings to know how much they can bear in life. The psychological way to confront disease and pain is through humbleness and acceptance that these things come from God. Since personal health is in the

hands of God, the issue of the best age to be pregnant is not as important as it is in other countries, and this is expressed by the lack of agreement about the age range within which it is better to have children. In some focus groups the preference was around 18–19 years old as the best age, but in others the period was wider (20–35 years old). Health is seen as a psychological, physical and spiritual condition of wellbeing. Human beings should also thank God for keeping them healthy. When a person is healthy, they are full of energy provided by God. A symbolic way to represent this was mentioned by several informants. They refer to it to as "a crown on a head of the healthy people." When this crown disappears the person is at risk of getting sick. Health conditions change when women get pregnant. Informants referred to a wide variety of conditions (both diseases and symptoms) that appear during this period, the most important being: anemia, infections, general weakness, vaginal bleeding, fever, hemorrhoids, and back pain. They also referred to diseases such as cancer and diabetes. The majority of women focused their attention on physical conditions but some of them also mentioned psychological conditions.

In Argentina, one outstanding feature of these women is the early ages at which they start their reproductive life and the high level of parity. Women having 5 children or more (17% of the total) had an average age of 31.8 years. Educational level was also low and even illiterate women participated in the groups. Women's discourse about health and illness is almost empty of religious references. Their view about pregnancy is a natural one and the way they try to deal with problems during this period is experiential. For example, miscarriage was mentioned as a common experience among women but they don't refer to it in a painful way, as this is an event that can happen during pregnancy. On the other hand, a feeling of happiness and realisation of motherhood surround the experience of pregnancy. Age is according to women an important factor in experiencing a safe pregnancy. Women think that after the mid 20s, pregnancy is a more difficult experience. According to their view, every pregnancy is different but special care is always needed. Women realise that their daily activities in the household or at work may be need to be reduced, but many of them report that they don't necessarily follow these restrictions. In practical terms activities are not limited because they have no choice. However, pregnancy changes the mood of women. In their opinion pregnancy provokes anxiety, sadness, explosive moods, and acute sensitivity. In this area women agree that they need more understanding from the family but particularly from their partners. Pregnancy requires special attention but is not always possible to have it. Family support and the mother, when she is present, play an important role in the care of other children and household duties. Older children, particularly girls, also help at home.

Concepts about health, disease and pregnancy vary across countries in this study. In some cases a link between the cultural framework of general social values and these concepts is clear as in Saudi Arabia or Thailand but this is not the case in Argentina and Cuba where concepts had a more experiential or technical influence. In all four countries, pregnancy is seen as a special moment in the woman's lifecycle where a specific type of care is needed, but it is not seen as a natural phenomenon in all of them. In the case of Saudi Arabia it is particularly interesting to understand how religious values can shape the concepts and practices of women and men. This issue leads to the construction of symbolisms to show the presence of God in all human behaviour. In practice, Saudi culture gives great importance to pregnancy, delivery and child bearing [9] which makes health authorities and providers put particular emphasis to antenatal care as a means of achieving the best possible results. Cuba's cultural framework – mix of Catholic and African religious values – has been wrapped up by the technical information provided by care-givers. This allows women to use a very technical, sophisticated vocabulary regarding pregnancy. In Cuba antenatal care is also seen as a priority by health authorities who have put great emphasis on the achievement of some of the best maternal and perinatal mortality indicators in the world. Regardless of the framework of cultural values underlying women's thinking in each society, the view that younger ages are better for pregnancy is present across countries. Differences may be explained by the different social roles assigned to women at different ages.

Experience with health services and health providers (See Table 3)

Cuban women have strong opinions about the type of care that they prefer to receive. Underlying these opinions is the idea that modern and technically complex care is the care they really trust. They show a strong preference for being attended in the hospital by a specialist doctor rather than in the health centre by a family doctor. Women reported differences in the facilities and equipment available at the health centre. Distance from their homes is not important if they can get care in a hospital. They prefer to travel far from their homes to be sure that they will receive the attention they need. Currently, in the area of Havana covered by this study, the availability of primary health centres is high and women do not have to travel long distances. Women complain that equipment frequently does not work at health centres. This is the case with scales, thermometers and sphygmomanometers. Women have strong views about their preferences for specialist doctors but no preference about the gender of the provider. They state that family doctors only handle general information about pregnancy, and some women expressed their doubt about the ability of general practitioners to look after them. In their view, general practitioners are exposed to a wide variety of demands from the population and they have to give at least a superficial response to all of them, having very little chances to go in depth with every patient. Some women also pointed out that family doctors are not well trained to deal with their problems. On the other hand, specialists have enough information and are trained to respond to any query that women may have. Thus, practically all women prefer to visit the specialist.

Traditions are very important in Thai culture but current economic and social reality is making people change their views about the importance of sticking to traditions in the context of modernity. For example, this was expressed by the preference for hospitals over primary health centre. This is seen as a benefit of modernity contrasting with the preference for generalists, nurses and midwives over specialists. Women argue that they feel more secure attending the hospital because all the equipment is available there. Although the primary health centers are not in bad condition, hospitals have more resources, better trained personnel and are more comfortable and clean. In case of emergency the hospital is better prepared to respond. Following their rationale, Thai women have strong preferences for trained nurses and women providers. Although they recognise that doctors have more information than other staff, they prefer nurses, particularly midwives, because of their experience. Doctor's care is also considered valuable. Some women argue that the fact that midwives are themselves mothers and had experienced pregnancy makes them more capable of understanding women's needs at all levels, not only physiologically but also emotionally. Midwives have "special knowledge about mother-child care". Thus, there is a division between those women who prefer to be cared for by the doctor because of their "higher" knowledge and those who prefer the midwife because of their "special" knowledge. Gender appears as a very important issue. Most women state a preference for female carers. It is not just that they feel that women can understand better the experience of pregnancy, both the physiological and emotional aspects; modesty also plays a role here. Some women expressed the view that they do not feel happy exposing their bodies to male doctors. They feel specially uncomfortable when the doctor has to do a vaginal examination.

Saudi women express a clear preference for being seen by female doctors in antenatal care. They say they feel more comfortable with them in the physical examinations and when they ask questions about pregnancy, breastfeeding and so on. However male doctors are also accepted as long as a female nurse is present in the consultation. Regarding the type of provider, the majority of women think that the skills of doctors and nurses should be combined to provide health care services. Women say that doctors are better fitted to provide technical information in response to the questions they pose, while nurses are much better at comforting women in psychological distress or reassuring them about the anxieties they have during pregnancy. There is no consensus about waiting times. For a few women, waiting times are just right and cause no problems; the majority of women however refer to excessive waiting times and they particularly identify areas and services, which make them wait longer. Some of them say that health centres are frequently too crowded and that they have to wait 5 or 6 hours. They often have to wait when they go for blood tests to the lab or to dental care. Some of them say that this problem is caused by the way the services are organised (the appointment system, the number of staff in the health centres, etc.) and others say that they frequently have to confront a bureaucratic attitude among

staff. Conditions at the health centres are not highly regarded by some women. Although the majority expressed a high level of satisfaction, some women had critical opinions. For example they say that the availability of drugs and vitamins is not always good. Sometimes they have to go to the private pharmacy to buy prescriptions. Women also regard health centres as clean although some of them agree that toilets could be cleaner than they are. Some women say that the reception area could also be improved in its performance. Some complaints about providers' performance were registered. A woman mentioned giving responsibilities to staff that do not have appropriate training. For example, an administrative clerk provided a vaccine to her child provoking a swelling in his leg.

Health care services in Argentina, both in municipal and state-level institutions, are organised to refer patients from primary to secondary and tertiary levels. In theory this referral system works systematically but in practice there are many ways to get round it. In general women think that attending a hospital both for antenatal care and delivery is the best choice. This opinion is based on the fact that hospitals have all types of technology available while primary health centres lack the minimum resources. A few disadvantages are identified in hospital among them waiting times and geographical accessibility. Neither of these two disadvantages represents a major obstacle for women. If a woman is given the chance to choose they will look always for hospital care. However those women that receive antenatal care at health centres do not necessarily complain about the services received as they regard care in those settings as good based on the familiar, courteous and personalised care that they receive. Opinions about health personnel are generally good. For women in Rosario trust is the main issue in having a good relationship with staff and feeling happy and secure with health care. Trust covers a wide range of things; for example trust in the technical capacity of doctors and nurses, trust in the way doctors handle personal, private information, trust in the way doctors behave in the clinical encounter, etc. Nonetheless, women referred to other types of behaviour. At one end they identified doctors that were rude in the clinical check-ups; other doctors gave inappropriate answers to questions; and some others induced women to pay bribes to other staff or to themselves to release information that women were expecting. At the other end, women referred to groups of staff (mainly doctors) who were giving money from their own pockets to buy services such as lab tests in private institutions when the public hospital was not able to provide them and women could not afford to pay. There was no consensus on the issue of the type of provider that women preferred. Those who preferred male doctors argued that men are more careful in the way they proceed clinically. On the other hand, those who preferred women argued that most female doctors have had children themselves so they know about the physical and psychological needs of pregnant women. One other element that makes women prefer female doctors, although not a very common one, was the issue of shyness. These groups of women prefer to show their naked body to a woman than to a man. Despite the fact that there were references to opposition from husbands to women seeing male doctors, informants said that they had the final decision on this issue.

Evaluating women's opinions along the axis of modernity vs. tradition in health care can provide interesting interpretations about the role of health services, particularly antenatal care in each country. Literature shows that in certain countries women prefer to receive antenatal care and to deliver aided by midwives [10,11]. In Argentina modernity meant the use of the most technologically sophisticated health care available and was highly regarded. This is shown particularly in the preference for the use of ultrasound. The high demand of this type of technology may be linked to the capacity of the health services themselves to promote such preferences but also to the way this procedure can make women feel reassured about the baby's health. Research supports the view that women find ultrasound attractive and reassuring [12-14]. Cuban and Thai women do not show such a strong preference for ultrasound but Cuban women's high regard for modern medicine is shown by their preference for care from specialists' doctors. The role of family doctors is called into question when women do not consider them to have and to provide solid and accurate information. Only Thai women showed a particular preference for midwives as practitioners who are culturally linked to the way women understand pregnancy. As it was referred previously, only in Thailand midwives were involved in the provision of antenatal care in the trial. Saudi women strongly preferred female providers, perhaps because of the way Saudi society is organised separating men from women in all public activities. This also may explain why midwives

are preferred as providers of antenatal and delivery care. According to Baldo [15] in rural areas in Saudi Arabia women have a stronger preference for female traditional birth attendants. However, receiving care from a male doctor is possible as long as the social rule of having a female nurse in the consultation room is followed.

Opinions about the new ANC protocol (See Table 4)

[Table 4.](#) Opinions about the new antenatal care programme

This section summarizes the opinion of 79 women that participated in focus groups organized at intervention units in all countries.

There is a strong preference among Cuban women for visiting the doctor as frequently as possible, whether family doctor or specialist. Women participating in the modified schedule do not consider the reduction of visits, as positive since they feel that pregnancy is a special period in their life cycle therefore requiring very close care. Women also experience a lot of social pressure, inside and outside the household, to attend the clinic as often as possible. Mothers and mothers-in-law particularly exert pressure, as they belong to a generation for which the Cuban health system played an important role in creating demand at a time when it had the necessary means to cope with it. Women expressed a high level of satisfaction about the information they receive during pregnancy. Still, they might be lacking information on how to deal with the emotional and psychological changes occurring during pregnancy. Furthermore, they are able to differentiate the type of information given by family doctors from that given by the specialist, which they regard very highly. As mentioned before, women are very active in asking all type of questions to doctors, but doctors tend to provide only the minimum information to avoid women getting anxious about issues that they believe can only remotely affect them. Issues not considered in the change of the protocol were also referred by women and they could be influencing the opinion of women about it. Privacy is another sensitive topic addressed by Cuban women. A general view is that rooms in the clinics lack basic conditions for privacy. "In my unit there is no scales nor a blanket to protect the patient's privacy and the general practitioner (a woman) told me that in my visit to the specialist (a man) I have to take with me a piece of cloth to cover my body, otherwise the doctor (...) will not take his eyes away from you. The generalist told me that the specialist is not guilty but I, myself if I provoke his curiosity by not carrying my own piece of cloth".

Regarding the number of ante-natal care visits during pregnancy Thai women state that once a month on average is adequate. However, there is no consensus among women on how to evaluate the new model against the traditional one. Some of the women who participated in the new programme feel that the reduction of visits did not affect them as at every visit they were checked thoroughly by the doctors. However some of them expressed anxiety with only four visits. Experience with the new programme seemed to have reduced the initial sense of insecurity felt by women when they started with the modified protocol. The information received from providers is an important issue for women. The majority feels that they receive enough information from providers but some topics should be addressed more in depth. A topic that they would like to receive more information about is nutrition and the type of food they can and can't eat. Information provided to Thai women is normally considered good in terms of amount and quality. Women acknowledge the capacity of nurses to be patient with them and to take their time to make them fully understand the message. Courtesy is a strong value in Thai culture and antenatal care is an environment where courtesy is highly expressed. Women say that in their experience the majority of times they are treated courteously. However, some exceptions appeared mainly related to administrative staff.

In Saudi Arabia, there is a clear division in women's opinions regarding the number of visits during antenatal care. For some of them if the pregnancy is a normal one the number of visits in the new protocol is acceptable. This feeling is strengthened by the possibility of making additional visits to the health centres at any time they feel they need to. Some other women think that the number of visits in the modified protocol is not enough and that 1 or 2 more would be better, particularly in

the first three months of pregnancy. They think that between the first and second visit there should be another one. One woman said that she feels the need for an ultrasound test earlier in the pregnancy to feel secure about the position of the baby. Information provided by doctors and nurses is considered good but there is a lot of room for improvement. Some women would like to be able to ask more questions than they normally do; however, this is not always possible first because they don't feel confident enough to ask, and second because doctors do not necessarily respond to their questions. Communication with male doctors is difficult because women feel embarrassed to ask them about their worries. Some women ask the nurse to ask the doctor her questions. Women say that they normally get information from doctors in the consultations but very rarely outside the office. They also say that quite frequently, information is provided by nurses and not by doctors. Saudi women in general feel that doctors and nurses are very much aware about their health conditions and their pregnancy. This feeling is generated by the fact that staff visits them even at home when the date of the appointment is close. Women also report that they are treated with respect and courtesy in the consultation. Some women said that they like it when the doctor is a religious person.

Argentinean women varied in their assessment of the information they receive from health providers. At first most of them said they were satisfied with the information they got but when questioned about specific issues they did not necessarily report complete satisfaction. Some topics are more fully explained by staff than others. Nutrition, weight-gain, and family planning techniques for example belong to the former group. Several references were made about the lack of information on new tests such as the urine test that uses a paper strip to identify infections. Most women said that they didn't know the purpose of it. There were practically no comments about the need for psychological advice. Some women say that they have found inconsistencies in the way doctors provide information.

Unlike the rest of the countries, in Argentina, the use of new technology in antenatal care has been deeply incorporated into women's cultural values. One major issue here is the way they trust ultrasound and the benefits they find in its use. Demand for the procedure is high. Ultrasound seems to reduce anxiety, provide new information create psychological security and to identify unforeseen changes in the mother and the baby. Women argue that ultrasound makes them confident about the baby's health. Women deny that knowing the baby's sex is the most important reason for wanting ultrasound.

Preferences expressed regarding the number of visits show a wide variation across countries, ranging from 7 to 8 in Thailand to 18 in Cuba. Depending on the country, this range can be explained by the influence of several factors. In particular the health care model in Cuba has promoted the surveillance of pregnant women as priority policy. This preference is shared by the population that regards this amount of visits as normal and necessary. Compared to the rest of the countries the Cuban figure is outstandingly high. In Saudi Arabia, since women always have to be accompanied by their husband for a consultation, an increase in the number of visits may lead to difficulties due to their husbands' time constraints but a decrease is seen in a sympathetic way. Other observers have pointed out the same issue [16] reporting that women consider no more than 10 visits appropriate. Most women in all four countries considered that the information they received from providers was appropriate and reported high satisfaction. However, in all of them, observations about problems with the provision of information appeared. In Argentina and Thailand women referred problems regarding technical information, Cuban women referred to the lack of an affective/psychological component in the information provided to them, while in Saudi Arabia the issue of male provider/female user interaction was referred as problematic. Although satisfaction was generally manifested among women regarding the treatment they received from providers, some criticisms were made. In Saudi Arabia and Thailand lack of the expected level of courtesy was the issue while in Argentina there were some complaints about explicitly rude treatment. In Cuba the practice of scolding patients by practitioners is taken in a positive way as an example of the concern felt for the woman.

Discussion

The most important limitation of this study is its external validity. The research methods used in

the collection of data produced qualitative data that can only yield interpretations relative to the populations under study. Conclusions can only be valid for the countries and the units involved in the trial. However, in this section our findings are contrasted with results of other studies which strengthen the capacity to achieve a more accurate interpretation of the researched phenomena. Our study focuses in women's socio-cultural aspects related to their perception of the changes in the antenatal care protocol. This however does not imply that socioeconomic status might not play a key role in these perceptions. The effects should be further studied with appropriate statistical techniques.

Women's understanding of their pregnancy condition can be shaped by different circumstances related to specific cultural settings [17,18]. These circumstances can be present in different environments such as the household, the community, the school and others [19-21]. Nonetheless it is assumed that contact with health care institutions, and particularly with health providers, are paramount in the shaping of women's views. If this statement is true, then clinical interventions can be used to improve clinical outcomes, and also efficiency and quality of care, particularly those aspects addressed by women and described in this report. It is important that changes in clinical care should be sensitive to women's particular needs in order to move in the right direction when changes are made.

Taking into consideration the opinion of women, it is possible to arrive to initial conclusions on how antenatal care varies according to cultural settings [22,23]. Several aspects can be considered by women to evaluate the programme and some of them may be more important in specific contexts. In Cuba the reduction of visits may be perceived negatively while in Argentina the lack of information would be a more relevant topic to be considered related to the potential provision of a new programme. However, there are some aspects that are present in each country and that should be further discussed. Three aspects are considered to catch the essence of the problematic and are addressed next.

The behaviour of practitioners is an important aspect that was raised by the participants of the study. Although there was no clear preference about the sex of doctors, the idea that men can be potentially intrusive in the intimacy of women was present in all countries, but expressed in different ways. In general, male doctors are regarded as professional people, able to separate their emotions from their rational, technical performance. However, while in Cuba women showed no apparent shyness towards male doctors, nurses were very clear in their messages to warn patients about the possibility of doctors intruding their intimacy. The expression of this phenomenon in Saudi Arabia was clearer as the cultural frame is quite explicit, subjecting male doctors to be supervised by women when they perform in private environments.

The amount of resources and the technology involved is another aspect to be discussed. Several studies show the importance that women give to ultrasound; particularly in developed countries where this technology is used to reassure mothers and relatives [24]. Therefore, it seems that women currently the demand of ultrasound is playing a social role that allowing a potential detection of abnormalities in the foetus [13,25]. In Argentina, in the definition of the intervention protocol some physicians involved in the trial requested one ultrasound assessment without medical indication, which was not included [1]. This may indicate the role that practitioners can play to induce the utilization of a technology which has not proved real capacity to assess the development of pregnancy and for which there are not strong elements to define it as priority vis-à-vis other procedures. As this technology is not widely available in rest of the countries, women did not even mention the lack of this resource. Sensibly used, technology can be a powerful resource not only because of its ability to help the diagnostic capacity of health care services and practitioners but also because its presence in the unit creates among patients the sense that they are treated according to the highest standards of quality. However, it is important to carry out cost-effectiveness studies about the potentialities of technology particularly in developing countries where resources are scarce before introducing its routine utilization [24]. Furthermore, accurate information should be given to women about the capacities and limitations of diagnostic procedures[26].

The last topic is the role of information provided to women. As results show there is also a country

variation regarding this issue, not only on the amount but also in the type of information provided. Thus, while Cuban women receive a good deal of information and reflect very much the technical language of doctors and nurses when they speak, they complain about the lack of information regarding the psycho-social side of care. Cuban women have a higher level of education and they are more capable to use information to have a better understanding of their condition but not necessarily to question doctors' point of view. In Thailand and Saudi Arabia information received by health personnel is not questioned, but is interpreted according to traditional cultural values [27].

Finally, findings presented in this paper have to lead to health authorities and those responsible for the provision of antenatal care services in each country to take into consideration the role of women's opinions and preferences in order to make sure that new programmes are sustainable. There are basic issues of general antenatal services that can be improved but there are also some specific to the introduction of modified protocols of care. One general aspect is that any change in the provision of services takes time for everybody to understand even though these changes have a very sensible, scientific base. The time frame may vary between countries. Cultural and social contexts evidently shape the way that programmes are applied especially when they tend to standardize health services to a common norm. Reducing the number of antenatal visits to four in Cuba is a quite different story from introducing such a pattern of care in Thailand or Saudi Arabia. Preferences expressed by women have to be taken into consideration particularly those in which all women agree. This does not mean that personal preferences may not be addressed but responses have to be different in every case. One of the issues that women insisted on in all four countries for example was the issue of information given by providers. This represents a major topic that is located in the nucleus of the relationship between personnel and women. Reviews of women's experiences of maternity care indicate that information and communication are central issues [14] and that they have to be improved according to the cultural setting.

Competing interests

- Have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this paper in the past five years? NO
- Have you held any stocks or shares in an organization that may in any way gain or lose financially from the publication of this paper? NO
- Do you have any other financial competing interests? NO
- Are there any non-financial competing interests you would like to declare in relation to this paper? NO

Authors' contributions

Author 1 and 6 participated in the design of the study and coordinated it. Author 1 elaborated the different versions of the manuscript. Author 7 was the PI of the WHO randomized trial, participated in this study design and implementation of the study, and made essential contributions to the different versions of the manuscript. Author 2, 4, 5 and 6 coordinated project implementation in each country. The rest of the authors participated in the WHO randomized trial and provided input to this specific component of the study. All authors read and approved the manuscript.

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