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Towards person-centred maternal and newborn care in Ethiopia: a mixed method study of satisfaction and experiences of care

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Abstract

Background Person-centred maternal care is associated with positive experiences in high-income countries. Little is known about the transferability of this concept to non-Western, low-income settings. We aimed to explore women's experiences of care and investigate satisfaction with antenatal care (ANC) in relation to person-centred care and unmet psychosocial needs in rural Ethiopia.

Methods Design: facility-based, convergent mixed-method study. A cross-sectional survey included 2079 consecutive women attending ANC at eight health centres. Service satisfaction was measured using a 21-item validated measure. Independent variables: [1] person-centred care (1A: receipt of information; 1B: perceived adequacy of health worker responses) and [2] unmet psychosocial needs (2A: Patient Health Questionnaire for depressive symptoms; 2B: screening questionnaire for intimate partner violence (IPV)). Linear mixed effect regression assessed hypothesized associations between person-centred care/unmet psychosocial needs and service satisfaction, accounting for clustering at the health centre level. A linked qualitative study comprised eight in-depth interviews with women accessing ANC. Structured observations of ANC consultations rated health worker competencies ($n=65$) and adherence to guidance promoting person-centred care ($n=53$). Qualitative data were analysed thematically and triangulated with quantitative and observational data.

Results Women reported lowest satisfaction in relation to family involvement (71.5% dissatisfied) and continuity of care (65.7% dissatisfied). As hypothesised, satisfaction increased with more information received (adjusted regression coefficient (ARC) 0.96 95%CI 0.71,1.20) but reported adequacy of help from health workers did not show a dose-response relationship (test-for-trend $p=0.157$). Undetected depressive symptoms (ARC −0.21 95%CI -0.27,-0.15) and IPV (ARC − 1.52; 95%CI -2.43,-0.61) were associated with lower service satisfaction scores. Most observed consultations scored low on most indicators of person-centred care. In qualitative interviews, women valued respectful and

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responsive communication from health workers, which affected their willingness to disclose psychosocial problems. Triangulation of findings indicated a mismatch between what women valued about care, their reported satisfaction with care and the actual care they were observed to receive.

Conclusions Systems strengthening interventions to support person-centred maternal care appear contextually relevant but need to increase women's expectations of care and agency to demand change. Prioritization of person-centred care could improve women's experience of maternal care and better address psychosocial needs.

Keywords Antenatal care, Patient satisfaction, Person-centred care, Quality of care, Experience of care, Perinatal mental health, Intimate partner violence

Background

Quality health care has been defined as care that is effective, efficient, accessible, person-centred, equitable, and safe [1]. It was estimated that provision of quality maternal and newborn care could have saved the lives of 670,000 neonates and 82,000 women in low and middle income countries (LMICS) in 2020 [2]. Effective health systems are central to achieving high quality care. Amongst other attributes, high quality health systems are designed to meet the needs and expectations of the populations they serve, and to provide a positive user experience, which engenders confidence in the system and maximizes positive outcomes [2].

Making health services person-centred is one of the key system changes required to improve the quality of care [1, 3, 4]. The main domains of person-centred maternal care have been defined as dignity and respect, communication and autonomy, and supportive care that is holistic and includes emotional support [5]. The World Health Organization (WHO) quality of care framework for pregnant women and newborns includes these domains as key aspects of the experience of care [3]. Studies conducted in LMICs indicate that person-centred maternal care improves pregnancy outcomes; higher ratings on the dignity and respect or supportive care domains were associated with fewer newborn complications in an observational study from Kenya, with all three domains associated with increased willingness of the woman to return to the facility for her next delivery [6]. A systematic review of community-based and facility-based studies in LMICs found that obtaining adequate information and support were important factors contributing to a woman's satisfaction with maternal care [7]. On the other hand, absence of person-centred maternal care has been associated with harms. In a quasi-experimental study from India, women who experienced mistreatment or who were not asked for consent during delivery were more likely to experience delivery and postpartum complications [8].

Women's psychological and social needs should be considered alongside their obstetric needs in the delivery of person-centred maternal care. There is a high unmet need for psychosocial care during the perinatal period (pregnancy through to one year post-partum [9]) in LMICs. An estimated 16% of pregnant women are affected by depression and anxiety [10], and 16% of pregnant women in Africa experience physical violence from an intimate partner [11]. In Ethiopia, the treatment gap for perinatal depression is estimated to be over 90% [12]. Undetected perinatal psychosocial problems have important adverse consequences for women and children. Perinatal depression has been associated with increased child mortality [13], particularly when present in combination with intimate partner violence [14]. Psychosocial problems also affect maternal care service utilization, with undetected antenatal depression associated with increased emergency health care visits [15], emergency delivery [16] and perinatal complications [16].

Several studies, conducted in a range of LMICs, indicate that current provision of maternal care falls short on most aspects of person-centred care [17, 18]. In a systematic review of 65 studies, there was evidence of widespread mistreatment of women by healthcare providers during delivery based on women's self-report and observation [19]. In many settings, women have limited knowledge about their rights and how to communicate their concerns to health professionals [18]. However, despite these apparent deficiencies, several studies from LMICs indicate that women are satisfied with the maternal care services provided [20–23]. Similarly, studies conducted in Ethiopia indicate that women attending antenatal care are satisfied with the existing service [24–27], despite objective indicators of low quality [28, 29]. Person-centred care has been found to be important for a positive experience of care in high-income country settings [30], but few studies have been conducted in LMICs [17, 18]. The extent to which concepts of person-centred maternal care fit with women's values and preferences regarding care in non-Western, low resource settings is uncertain.

The aim of this study was to explore women's experiences and investigate satisfaction with antenatal care in women attending primary health centres in Ethiopia in relation to receipt of person-centred care and unmet psychosocial needs. We hypothesized that person-centred care (adequacy of health worker response, information received) would contribute positively to antenatal care

satisfaction, whereas unaddressed psychosocial concerns (depressive symptoms and intimate partner violence) would be associated with lower satisfaction.

Methods

This study was conducted as part of the National Institute of Health Research Global Health Unit on Health System Strengthening in Sub-Saharan Africa (ASSET). The overall aim of ASSET was to co-develop, test and evaluate health system strengthening interventions to promote integrated, person-centred care across three healthcare platforms (maternal and newborn care, surgical care and integrated primary care) in four African countries (Ethiopia, Sierra Leone, South Africa and Zimbabwe) [31]. The focus of this study is maternal and newborn care in Ethiopia.

Study design

We conducted a convergent mixed methods design study comprising a facility-based cross-sectional survey, observed interactions between pregnant women and antenatal care staff, and in-depth interviews with perinatal women [32].

Study setting

The study was carried out in Sodo, South Sodo, Meskan and West Meskan districts, and Butajira town, in the Gurage zone, Southern Nations, Nationalities and People's Region of Ethiopia. The site is located 100–130 km south of Addis Ababa. The area is predominantly rural. The combined projected population of the study area for the years 2014–2017 was 408,140 (298,855 rural and 109,285 urban residents).

In Ethiopia, the health system is classified into three levels. The first is primary health care, comprising health centres linked to 3–5 satellite health posts in rural settings or health centres with a linked primary hospital in urban settings. Secondary level health care comprises general hospitals, and tertiary level health care is delivered at centralized, specialist hospitals. In the study site there is one general hospital, one primary hospital, sixteen health centres and ninety four health posts [33]. The nearest specialized hospitals are in Addis Ababa and Worabe (40 km away).

At the health post level, a health extension worker (with at least secondary school education and one or two years of training) identifies pregnant women, links them to the health centre, provides information to women and their families, and supports re-engagement when women drop out of maternal care [34]. At the health center level, services are provided by midwives, nurses and health officers, including antenatal care for normal pregnancies and deliveries, postnatal follow-up, family planning, and immunization. High-risk women or women who experience complications are referred to primary hospitals (staffed by non-specialist doctors) or general or specialist hospitals (staffed by obstetricians). In Ethiopia, most women first attend for antenatal care (ANC) in the second or third trimester of pregnancy [35].

From early 2019, the Federal Ministry of Health of Ethiopia introduced the Ethiopian Primary Health care Clinical Guidelines (EPHCG) to the study site to promote integrated, person-centred and evidence-based care in health centres [36]. The guideline provides clinical algorithms for the delivery of routine antenatal and postnatal care, specifying the information to be provided to women and integrating detection and management of psychosocial needs as an integral part of person-centred care.

Study [1]: Facility-based, cross-sectional survey

Study population and sampling

The study population was women attending routine antenatal care at eight health centres, which were selected based on their high ANC flow and location, and to obtain a balance of rural and urban districts. On recruitment days, consecutive women attending ANC were invited to participate. Every woman attending on a particular day was potentially eligible and approached or recorded as missing. The inclusion criteria comprised pregnant women, fluency in Amharic (the working language of the study area and region), aged 18 years or above, who were able to provide informed consent.

Recruitment

Recruitment took place from 18th July 2019 to 9th January 2020. Women attending ANC clinics were approached by research data collectors while waiting to see the health workers. Data collectors introduced the purpose of the study. After the women had finished their consultation, they were approached again, given full information and invited to participate in the study. The data collector spoke with the woman in a separate, private room. For literate women, an information sheet was provided. For non-literate women, data collectors read out the information sheet in the presence of an independent witness. Informed consent was signified by a thumb print for non-literate women and a signature for literate women. Lay data collectors first administered fully structured questionnaires to consenting women, before linking the participant to a clinical data collector.

Data collection

All data collectors were female and comprised both lay data collectors (with a minimum of high school education) and clinical data collectors (with a minimum qualification of a diploma in nursing). Data were collected with electronic tablets using Open Data Kit (ODK) software [37]. Masters-educated research coordinators

delivered one day of training to orientate data collectors, supervisors and field coordinators to the questionnaires. Data collectors then spent one week further familiarizing themselves with the questionnaires and discussing unclear items with supervisors and field coordinators. Research co-ordinators then delivered one day of training to all field staff on how to use the ODK data collection template, followed by a further week of practice. Feedback from data collectors was used to finalize the ODK template. The data collectors then spent one more day practicing administering the questionnaire to one another.

Data collection started in one health centre immediately after training and expanded to the other seven health centres within one month. Supervisors carried out daily data checks at their respective health centres. Field coordinators downloaded and backed up the data every day. Clinical data were extracted from clinical notes and patient record cards, or (for blood pressure, weight and height) collected directly from participants immediately after they finished their consultation.

Sample size calculation

The target sample size of 2071 was calculated to detect psychosocial problems in pregnant women: an overall ASSET study objective to be reported elsewhere.

Measures

Dependent variable: Satisfaction with care

In the absence of a validated measure of satisfaction with antenatal care, we used a modified version of the Mental Health Service Satisfaction Scale (MHSS) to assess satisfaction with care [38]. The MHSS scale has been validated in health centres in the study site and most items assess generic aspects of out-patient care relevant to the context e.g. asking about aspects of health worker communication, waiting times, privacy, usefulness of care, cleanliness of the facility. Items less relevant to maternal health care (e.g. economic impact of care in the context of free maternal care) were removed. The modified MHSS scale had 21 items and uses four Likert response categories (1: strongly disagree, 2: disagree, 3: agree and 4: strongly agree). Exploratory factor analysis using maximum likelihood estimation, together with a scree plot, indicated that the scale was unidimensional (as per the original validation), supporting construct validity in this sample.

Exposure 1: Person-centred care

The indicators of person-centred care measured in this study were receipt of information and adequacy of health worker responses to concerns.

(i) Information received on birth preparedness and complication readiness Participants were asked about information they had received to support their preparations for childbirth or ability to respond to any complications, using a modified version of an instrument that was used previously in Ethiopia [39]. The new evidence-based guidelines for health centres require health workers to provide this information to women at ANC. Exploratory factor analysis was conducted using a correlation matrix obtained by tetrachoric correlation as an input. Eleven out of 12 items loaded onto a single factor and were summed to give a total 'information' score.

(ii) Perceived adequacy of health worker response to concerns In addition to the structured questionnaires, lay data collectors asked participants about the type of help they expected from health workers for any current problem " What type of help did you expect from the health worker today?", and about the adequacy of any help they had received "How adequate was the help that you received for *your problem* from the health worker? ". Responses were coded as not adequate, partially adequate, or fully adequate.

Exposure 2: Psychosocial needs

Depressive symptoms The Patient Health Questionnaire (PHQ-9) was used to measure depressive symptoms. The PHQ-9 is a nine-item questionnaire [40]. Each item is rated according to persistence of the symptom (0: not at all, 1: several days, 2: more than half of the days, 3: nearly every day). A contextually adapted version of the PHQ-9 has been validated in people attending primary care in the study area. The questionnaire, originally developed as a self-administered questionnaire, was adapted for interviewer administration in low literacy settings [41], and in pregnant women [42].

Intimate partner violence (IPV) A five-item non-graphic language scale was used to screen participants for intimate partner violence (IPV) exposure [43]. This scale has been used in the study population previously and found to be acceptable and have convergent validity with the more extensive WHO IPV questionnaire [44]. As recommended by the developers, a score of 2 or more on any of item 1 (working out arguments), 3 (partner treatment) or 4 (feeling safe) indicates marital discord and possible IPV.

Confounders

Closed-ended questions were used to assess socio-demographic variables including age, residence (urban/rural), marital status, parity and educational level of

participants. The hypothesised conceptual model is presented in Fig. 1.

Data analysis

Data were analysed using Stata software version 14 [45]. Descriptive statistics were used to produce frequencies for categorical variables and appropriate indicators of central tendency for continuous variables. Linear mixed effects regression was used to test the hypotheses of an association between indicators of person-centred care (adequacy of health worker response)[model 1 A] and information received) [model 1B]) or psychosocial needs (depressive symptoms [model 2 A] and IPV scale [model 2B]) and women's total satisfaction score measured on the MHSS scale (dependent variable), and accounting for clustering by health centre For each model, we included potential confounding variables that were identified a priori based on the published literature: age, education, urban/rural residence marital status and parity. To account for the effect of the number of data collection days in each health centre and average ANC attendance per health centre per day (calculated over a 6-month period) we also included these variables in each model. The histogram of the residuals from the final model was symmetrical indicating no gross violation of normality assumptions. Statistical significance was considered when $p < 0.05$. The magnitude of the association of each hypothesised exposure variable with the outcome was reported as adjusted regression coefficients (ARC), with 95% confidence intervals (CI).

Study [2]: Observations of clinical interactions

Structured observations of clinical encounters in antenatal care were conducted alongside the cross-sectional survey. Health centres were selected purposively, representing a balance of urban and rural settings seeking a total of 60 consultations: five per health worker. On days when assessors were available, consecutive consultations between consenting women and health worker were observed. Informed consent was obtained from both the health worker and the woman ahead of the consultation. Assessments rated [1] health worker competencies in person-centred care using an adapted version of the Enhancing Assessment of Common Therapeutic factors (ENACT) scale, and [2] the extent to which the health worker adhered to the Ethiopian Primary Healthcare Clinical Guidelines (EPHCG) for promoting person-centred antenatal care, including integrated psychosocial care. The ENACT tool was originally developed to rate the non-specific psychosocial competencies of health workers delivering psychosocial interventions, and the version adapted for the Ethiopian context was found to be reliably administered [46]. Twelve of the 18 items measure key competencies for person-centred care, including communication skills, considering women's concerns and goals, and providing comprehensible information. Each competency item is rated as needing improvement (score 1), done partially (score 2), or done well (score 3). The assessors of person-centred care competencies had a master's degree in clinical psychology or were trainee psychiatrists. They were experienced in use of ENACT and received refresher training [47]. The assessors of adherence to the EPHCG guidance were diploma level-educated nurses.

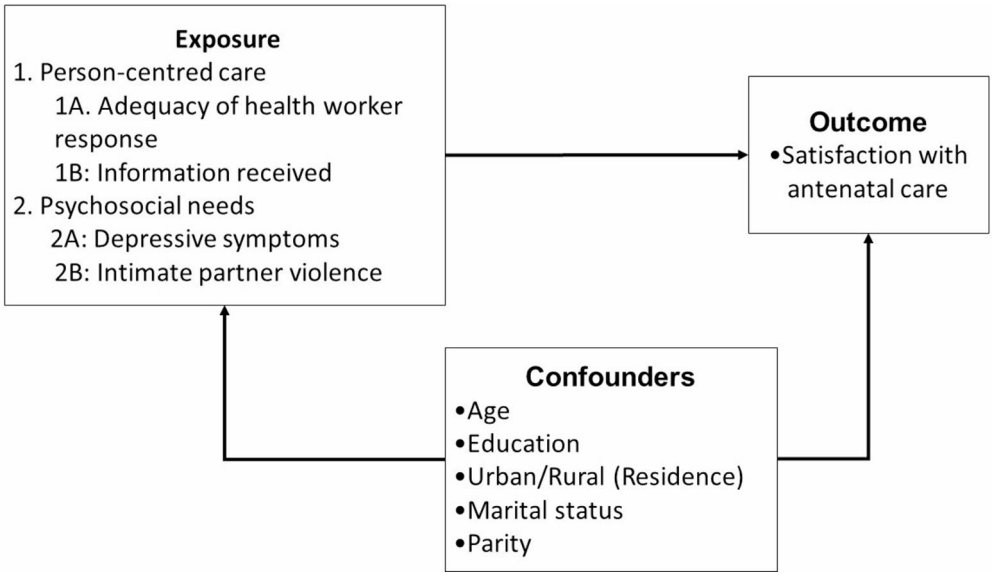

Fig. 1 Conceptual model for data analysis

Study [3]: Qualitative study

The qualitative study comprised in-depth interviews, which were partially nested within the antenatal care cross-sectional survey.

Population and sampling

Participants were pregnant women attending routine antenatal care at eight selected health centres in the study district. Women were selected using purposive sampling based on their residence (rural/urban). Eligible women were required to provide informed consent, and were able to converse in Amharic, aged 18 years or above, not acutely unwell or requiring emergency care, and able to understand the interview.

Data collection

Qualitative data were collected before, during and after the cross-sectional survey. Master's-degree qualified researchers (MG and AM) recruited women after their antenatal care visit and carried out the in-depth interviews in a private setting. A topic guide was used which explored the woman's experiences of that day's antenatal care appointment, the approach taken and her interaction with the health worker, what information she received about danger signs in the perinatal period, her preparations and expectations for delivery and the postnatal period, and any concerns or problems that she faced.

Data analysis

Interviews were audio-recorded with women's consent, transcribed in Amharic, translated into English, and uploaded into OpenCode 4.02 software [48]. We used thematic analysis [49]. Two members of the research team (TE, EF) read and re-read the transcripts to familiarize themselves with the data and independently carried out line-by-line coding of one interview. Then EF and TE met to discuss codes. An additional two interviews were then coded independently, and a common codebook was developed. The coding and codebook were discussed with a senior researcher (CH), revised to reduce redundancy, and then applied to the remaining interviews, allowing for emergence of further codes as needed. Codes were then grouped into higher order categories and developed into sub-themes and themes through close discussion between TE, EF and CH. A case-by-case summary of findings for each sub-theme was charted in Excel and used to develop an overall summary of the findings by sub-theme. Exemplar quotes were selected to illustrate findings.

Findings from the quantitative study, qualitative study, and observational study were triangulated and synthesized [32] to illuminate understanding of women's experience of person-centred maternal care.

Ethical considerations

Ethical approval was obtained from the Institutional Review Board of the College of Health Sciences of Addis Ababa University (Reference number: 028/18/Psy) and King's College London (Reference number: HR-17/18-6570). Written informed consent was obtained from each participant. Participants who scored ten or above on the PHQ-9 and/or reported suicidality on the ninth question were referred to their health worker for follow-up by a member of staff trained in mental health care. Women who disclosed intimate partner violence were provided with contact details of governmental organizations able to provide support.

Results

Cross-sectional survey

Of 2426 women approached, 2200 (90.7%) were eligible. The ineligible women were unable to speak Amharic ($n = 203$), younger than 18 years ($n = 14$) or required emergency treatment ($n = 9$). Of the eligible women, 2079 (94.5%) participated in the study. Of those who did not participate, 80 (3.6%) refused and 41 (1.9%) did not attend for the scheduled assessment.

Participant characteristics

More than half of the participants were aged 25–34 years (55.0%; $n = 1144$), with a mean age of 26.0 years and standard deviation (SD) = 4.9 (Table 1). Over two-thirds of participants had received formal education (70.5%; $n = 1468$), although most (53.8%; $n = 1119$) had only completed primary school. More than half of participants resided in rural areas (53.6%; $n = 1115$) and almost all were currently married (96.8%; $n = 2013$). Nearly half of the participants (49.3%; $n = 1024$) were attending for their first antenatal visit. Of women attending for the first time, almost all (96.7%; $n = 985$) were in their second or third trimester (83.3% ($n = 849$) and 13.3% ($n = 136$), respectively). The majority of women (71.3%; $n = 1481$) had a parity of one or more.

Antenatal care satisfaction

The mean satisfaction score (MHSS scale) was 60.7 (SD = 8.7))), with scores ranging from 22 to 84 out of a maximum possible total score of 84 (Table 1). Service satisfaction for specific MHSSS items dichotomized as satisfied/not satisfied ranged from 24.2 to 96.0% (Supplementary File 1). The majority of women were satisfied with 19 out of 21 items. However, only 42.9% ($n = 890$) agreed that "the health worker involved my family helpfully" and 24.2% ($n = 502$) agreed with the statement "I have the opportunity for follow up with the same health worker".

Table 1 Sociodemographic and clinical characteristics of participants

Characteristic	Categories	*N* (%)
Age (years)	18–24	751 (36.1)
	25–34	1144 (55.0)
	35–50	184 (8.8)
Education status	No formal education	611 (29.4)
	Primary education only	1119 (53.8)
	Secondary education only	290 (13.9)
	Post-secondary education	59 (2.8)
Place of residence	Rural	1115 (53.6)
	Urban	964 (46.4)
Marital status	Married	2013 (96.8)
	Single (never married)	37 (1.8)
	Separated/ divorced/ widowed	29 (1.4)
Perceived adequacy of health workers response to concerns	Not applicable	79 (3.8)
	Not at all adequate	49 (2.4)
	Partially adequate	364 (18.2)
	Fully adequate	1587 (79.35)
Provision of information (birth preparedness and complication readiness)	Minimum Maximum Median (IQR)	0 11 2 (1,2)
Depression symptoms score (Patient Health Questionnaire-9)	Minimum Maximum Median (IQR)	0 27 3 (2,6)
Satisfaction score (Adapted Mental Health Service Satisfaction Scale)	Minimum Maximum Mean (SD)	22 84 60.7 (8.7))
Intimate Partner Violence (Non-graphic language-Scale > 1)	Scored under 2	1790 (86.1)
	Scored 2 or more on items 1, 3 or 4	289 (13.9)
Antenatal Care visit	1st visit	1024 (49.3)
	2nd visit	516 (24.8)
	3rd visit	325 (15.6)
	4th visit	206 (9.9)
	5th or more visit	8 (0.4)
Parity	Parity 0	595 (28.7)
	Parity 1	485 (23.4)
	Parity 2–4	777 (37.4)
	Parity 5 or more	219 (10.5)

Person-centred maternal care

Most of the participants (76.3%) reported that they had received "fully adequate" help from the health workers for their current presentation. More than half of participants had not received information on the 11 items relating to birth preparedness and complication readiness (Supplementary File 2). The median score (Interquartile Range (IQR)) on the information scale was 2 [1, 4].

Psychosocial needs

The median score (Interquartile Range (IQR)) on the PHQ-9 (depressive symptoms) was 3 [2, 6], with 4.4% ($n = 92$) of women endorsing suicidality. On the IPV Scale, 13.9% of women ($n = 289$) had evidence of probable intimate partner violence.

Hypothesis-driven analysis in relation to antenatal care satisfaction.

See Table 2. As hypothesised, service satisfaction was significantly associated with indicators of person-centred care. Women who received more information related to antenatal care expressed higher levels of satisfaction (adjusted regression coefficient (ARC) 0.96 95%CI 0.71, 1.20 per additional item of information received). Lower satisfaction was associated with reporting totally inadequate help with concerns versus fully adequate help (ARC – 3.57 95%CI -5.59, -1.54) but there was no significant difference in satisfaction for women who reported help to be partially inadequate (test-for-trend $p = 0.157$). Satisfaction decreased with higher levels of depressive symptoms (ARC – 0.21 95%CI -0.27, -0.15 for every one-point increase in PHQ score) and probable intimate partner violence (IPV) (ARC – 1.52; 95%CI -2.43, -0.61).

Person centredness of observed antenatal care visits

More than 60% of clinical consultations were rated as needing improvement, particularly in the areas of confidentiality ($n = 45$; 84.0%), therapeutic rapport ($n = 40$; 75.0%), exploring feelings ($n = 32$; 60.4%), exploring psychosocial stresses ($n = 50$; 94.3%), assessing mental health ($n = 34$; 96.2%), goals and expectations ($n = 34$; 63.5%), coping strategies ($n = 41$; 77.4%), and requesting feedback on advice given ($n = 39$; 73.6%). See Fig. 2. The item most often rated as being 'done well' was 'explaining appropriately'. Most participants were not informed or asked about their awareness of danger signs, their mental health, their experience of intimate partner violence, substance use, or what to do about them. See Fig. 3.

Qualitative study

Three themes captured the aspects of maternal care that women valued: being informed, expectations and experiences of care, and interactions with health professionals.

Women being informed

Some participants were satisfied by health workers' communication of information. They appreciated receiving regular health education sessions, receiving advice about their situation and postnatal care, and the use of local, understandable language. Several participants said that the information provided was clear, relevant, important, helpful and adequate. One woman preferred to receive health education more frequently and another preferred

Table 2 Hypothesis-driven analyses of person-centred care and psychosocial needs in relation to total satisfaction score

Regression model		Crude regression coefficient (95% confidence interval) ($n=2079$)	Adjusted regression coefficient* (95% confidence interval) ($n=1997$)
Model 1 A: Provision of information (birth preparedness and complication readiness)	Each 1-point increase on information scale	**0.93 (0.68, 1.19)**	**0.96 (0.71, 1.20)**
Model 1B: Perceived adequacy of health workers' response to concerns	Fully adequate	Reference	Reference[†]
	Partially adequate	-0.58 (-1.86, 0.70)	-0.59 (-1.87, 0.69)
	Not at all adequate	**-3.38 (-5.34, -1.41)**	**-3.57 (-5.59, -1.54)**
Model 2 A: Depressive symptoms (Patient Health Questionnaire; PHQ-9)	Each 1-point increase on PHQ-9	**-0.19 (-0.25, -0.14)**	**-0.21 (-0.27, -0.15)**
Model 2B: Intimate partner violence (non-graphic language-Scale > 1)	Scored under 2	Reference	Reference
	Scored ≥ 2 on items 1, 3 or 4	**-1.54 (-2.46, -0.62)**	**-1.52 (-2.43, -0.61)**

Bold emphasis indicated $p<0.05$

*Adjusted for age, educational level, marital status, parity, rural/urban residence, ANC flow and Number of days of data collection per health centre, with health centre as clustering variable

[†]Test-for-trend $p=0.157$

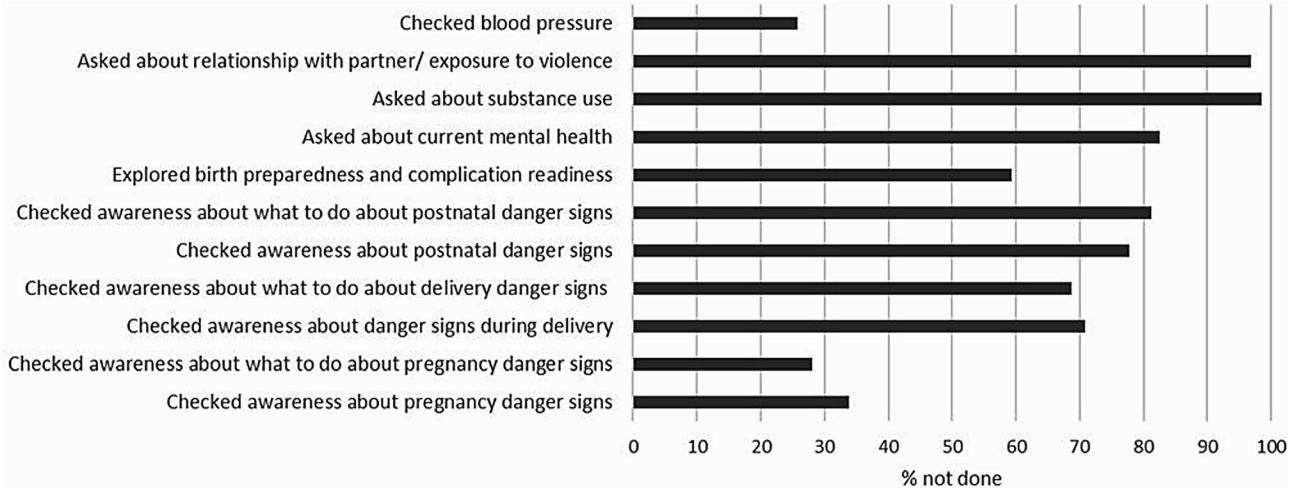

Fig. 2 Primary health clinical guideline recommendations not carried out ($n=65$)

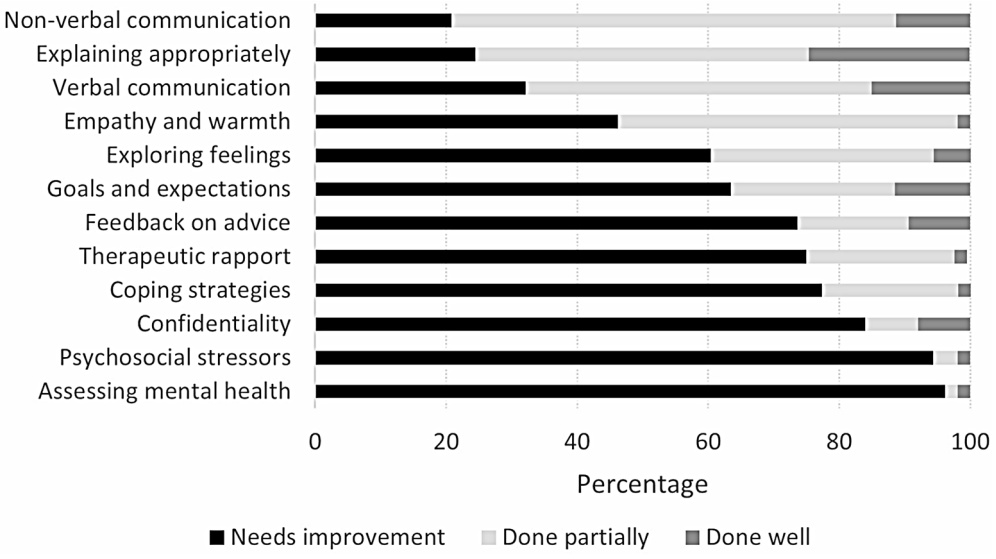

Fig. 3 Enhancing Assessment of Common Therapeutic factors (ENACT) ($n=53$)

health education to be given during women's gatherings, rather than in a clinical setting:

> *" …we will be called once in a month at 19th they educate us about things that are required at each time and about the thing that we should do and get prepared….they are humble and they clearly explain things when they educate. They also teach when we come for examination and every 19th in a month" (Participant ID_42).*

However, some women were not satisfied with the maternal care they had received. They spoke of receiving irrelevant information which did not consider their specific situation, was not adequate to meet their needs, and neglected postnatal concerns. One woman spoke of her response to information given about how she should prepare for delivery:

> *"The first one is [telling us to buy] the child clothes. They told us such type of things. But it is for someone who is wealthy, but they told that for us too. Yet we will say okay." (Participant ID_45).*

One woman reported that she felt the onus was on her to request information, rather than on the health worker to proactively share necessary information.

> *"Regarding the counselling, they just check your blood pressure and give you something. Otherwise, they didn't discuss about this thing; you just tell them what you are feeling and they tell you what it is" (Participant ID_34).*

One woman indicated that her experience varied according to different providers that she encountered over the course of her antenatal care. The value women placed on information and its relationship with their overall satisfaction with care was consistent with the quantitative findings. Women's experiences of variable information provision were borne out by both the quantitative and observational findings.

Expectations and experiences of care

Women's expectations of care appeared to relate more to logistical aspects of care and the perceived interest of health workers in their personal wellbeing than to technical aspects of care. Most women reported that they wanted to be seen as soon as they arrived at the health facility and to be given priority over people attending for other health conditions. They expressed a preference to be able to access all necessary diagnostic tests and treatments in one place.

> *"They had to treat me quickly when I went to them on my appointment day. We went back home after staying a long time sitting. I would like it if they treat us quickly" (Participant ID_43).*

Women expressed satisfaction with timely referrals and recognized improvements that had occurred over time, including a more welcoming approach, serving food for women in need, and improved attention to privacy.

> *"It is good. As per my observation, it was not like this in the past. They have beds and they make coffee for you. They give lunch and dinner to poor women who should stay in the health centre for some time." (Participant ID_21).*

Responsivity of health workers to women's needs was valued, in keeping with the quantitative association with service satisfaction. Women reported dissatisfaction when they perceived that health workers were ignoring them, not caring about their needs, or conducting inadequate assessments, as well as when clinical notes were mislaid.

> *"At [health facility name] you will wait till they find the card [clinical notes] and they will not get it too. They will say 'come in the afternoon,' but they will not find it. You will go to your home with nothing: no investigation, there is nothing they will give you there. They did not even give you a pain killer. You will hate them" (Participant ID_45).*

Nonetheless, despite these concerns, almost all women said that, for any emergency situation, the health facility was their first choice to get help. Most expressed a strong belief that they would find help there. This accorded with the high satisfaction ratings given by women despite objective limitations with the quality of routine care.

Women's interactions with health workers

Most women placed a high value on the quality of the interaction they had with their health worker, basing most of their satisfaction on this aspect of care. Women spoke about the importance of health workers assuming a welcoming approach, the way they gave advice, and how they valued the humility and kindness of health workers. One woman reported that they even welcomed women when they presented to facilities late at night.

On the other hand, others were unhappy about perceived lack of responsivity or lack of a willingness to help them. One woman even reported that she was scared to come for care because of their approach.

> *"The thing I want to say that has to be improved is that if the midwives treat mothers with good behaviour…sometimes mothers are scared to come here from their home …yes there are mothers who said it's not good to give birth there and who deliver at home." (Participant ID_46).*

Others spoke of their previous experiences of neglectful or abusive workers and being subjected to a procedure without consent.

> *"They have to treat us and accept our idea as soon as we come. Some of them don't tell you anything, they keep quiet and they only say 'come back on your appointment day'. When we come on our appointment day, they say it is not the date and tell us to come back after two months…. I prefer if they accept my ideas and speak to me in good manner but some of them have cold look while the others are good." (Participant ID_43).*

Some participants expressed that they would feel comfortable to share their emotional problems and/or talk to health workers about intimate partner violence, but one woman reported that it depended on the health professional's approach and another woman preferred to speak to a person who is close to her.

> *…."If it [IPV] happened to me, I know as I have to go to health institutions immediately, and if it happened to my neighbours or to someone I know, I will make them to go to health institutions immediately." (Participant ID_42).*

Despite women valuing respectful and warm communication and their satisfaction with care in the quantitative study, the observational study identified major deficits in verbal and non-verbal communication competencies.

Discussion

This mixed methods study illuminated drivers of women's satisfaction with maternal care in Ethiopia, and how these related to concepts of person-centred antenatal care, their psychosocial needs and women's priorities and expectations of care. There were high levels of reported service satisfaction. Women who experienced more person-centred care, including receipt of information to support birth preparedness and complication readiness, and positive responses to their concerns, were more satisfied. This accorded with qualitative findings that women valued key aspects of person-centred care, including being informed and being treated with respect. However, observational ratings indicated that consultations were rarely person-centred, and that health workers' communications skills were often poor. Women experiencing depressive symptoms and IPV were less satisfied with their antenatal care, in keeping with observations that women were rarely asked about psychosocial aspects of their wellbeing. This was supported by qualitative findings that women's willingness to mention psychosocial problems was related to the perceived receptiveness of their health worker to disclosure.

Our finding that women who experienced more person-centred care were more likely to be satisfied with their maternal care is in keeping with previous studies from diverse socio-cultural settings [25, 50]. Together with the qualitative findings, this lends support to the relevance of 'person-centred care' as a concept in Ethiopia. Women placed least emphasis on their involvement in decision-making and most emphasis on respectful, caring treatment that was responsive to their concerns and provided relevant and timely information. The importance of positive interpersonal interactions to women's perceptions of maternal care quality has previously been identified in obstetric services in Ethiopia [51]. The association between psychosocial problems and lower satisfaction also indicates that women might have been more satisfied with holistic care that went beyond their biomedical needs. Despite being valued by women, our structured observational ratings of consultations indicated that the actual care delivered was mostly not person-centred. Previous studies from Ethiopia based on women's reports have identified low levels of person-centred maternal care, particularly for women of low economic status, rural residence and those with worse clinical outcomes [52]. Our study underlines the importance of increasing the degree to which maternal care is person-centred, to promote positive experiences of care, which are vital to maximize women's engagement in the health system and improve health outcomes for both the woman and her baby [6, 8].

Women's satisfaction with maternal care is affected by discrepancies between their expectations and the care they actually receive [7]. High satisfaction ratings in this study, even when observations indicated that the quality of person-centred care was low, are likely to be partly explained by women's low expectations. Given that questionnaires were administered in the health care setting, women's responses could have been shaped by social desirability, and perhaps by concerns that negative appraisals of the service could jeopardize their care, despite reassurances about confidentiality. Women did, however, express a strong faith that the health system would support them during a perinatal emergency. Vulnerability to harm during the perinatal period has previously been found to be a prominent concern of pregnant women in this rural Ethiopian setting [53]. Recent progress in reducing maternal mortality in Ethiopia through

improved access to maternal care [54] may be an important factor in shaping women's trust in the service, underpinning high levels of satisfaction. Nonetheless, women's trust in maternal care should not be taken for granted, especially given this evidence of discordance between what women value about routine maternal care and what they actually receive.

For person-centred care, provision of relevant information is crucial to enable a woman to be fully engaged in decision-making and care planning. In Ethiopia and many low-income country settings, emphasis has been placed on ensuring the 'birth preparedness and complication readiness' of perinatal women, to reduce maternal mortality. This involves making women aware of danger signs in pregnancy, childbirth and the postnatal period, and empowering them to seek timely care if complications arise. However, our observational data indicated that health workers largely did not provide information that was responsive and relevant to women's needs, listen to women's views and concerns, or involve them in care planning. Studies conducted in other LMICs indicate a gap in the understanding of both health workers and women in terms of what person-centred care requires [6, 18, 30]. This may be addressed, in part, by orientating health workers to new ways of working and training them to acquire the competencies needed for a person-centred approach. Service pressures, unconducive physical environments and burn out in health professionals [55] also need to be addressed as part of a broader health systems strengthening approach to enable person-centred care to take place. In parallel, services need to empower women with greater understanding of their rights, and the importance of communicating their needs to health professionals.

The neglect of psychosocial needs of women was found to affect women's satisfaction with care in this study. In Ethiopia, 50% of perinatal women with high depressive symptoms prefer to access help in primary care settings [12], underscoring the potential benefits of integrating psychosocial care within antenatal care, as per the current Ethiopian maternal care guidelines within EPHCG [36]. There is increasing evidence for the effectiveness, acceptability and feasibility of brief, structured psychological interventions for perinatal women, delivered in routine settings by maternal health care workers [56], including in Ethiopia [57]. However, our findings indicate that health workers first need to be equipped with the competencies to conducted person-centred consultations, which facilitate the disclosure of psychosocial problems by perinatal women. The WHO has recently published guidance to support implementation of integrated mental health and psychosocial care within routine maternal care services [58].

Strengths of our study include the mixed methods design, large sample size for the quantitative study, use of a validated measure of satisfaction and a contextually adapted observational rating tool. However, our study was limited by the relatively small number of in-depth interviews and the broader focus of the topic guide on quality of care, without being specific to person-centred care and satisfaction, which may have reduced the richness of data obtained. The sample used for rating observed antenatal care consultations was small and could have been enhanced by inclusion of ethnographic approaches that would have allowed more contextually embedded understanding. We did not assess inter-rater reliability of the observational ratings but raters were trained intensively and well-supervised. Although low satisfaction was reported by women about family involvement in maternal care, we did not examine the nature of this dissatisfaction.

Future research needs to explore the perspectives of maternal health care workers and other relevant stakeholders, including intimate partners, on the requirements for quality antenatal care and concepts of person-centred care. Our study reinforced the inadequacy of service satisfaction as an indicator of care quality, highlighting the need for future studies to develop better measures. System strengthening intervention studies could investigate the benefits of including appropriate indicators of person-centred care in routine monitoring and evaluation systems.

Conclusions

Our study findings support the relevance of the construct of person-centred care in the Ethiopian setting and highlight the need to address the existing deficits in person-centred maternal care. Participatory health systems strengthening approaches are likely to be needed to equip and support health care professionals to identify women's psychological needs. Alongside this, there is a need for interventions to increase women's expectations of care and agency to demand change. Greater prioritization of person-centred care has the potential to improve women's positive experience of maternal care, better address their unmet psychosocial needs and strengthen the maternal health system to support high-quality care.

Abbreviations

WHO	World Health Organization
LMICs	Low and middle income countries
ANC	Antenatal Care
IPV	Intimate partner violence
EPHCG	Ethiopian Primary Health Care Guideline
MHSS	Mental Health Service Satisfaction Scale
ODK	Open Data Kit

Supplementary Information

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Supplementary Material 1

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Author contributions
Concept and design: CH, MP, and AA. Analysis or interpretation of data: TE, EF, GM and CH. Drafting of the manuscript: TE, EF and CH. Reviewed and commented on draft findings (AM, MB, AA, RK, TR, NS, AS, LH, JS). All authors read and approved the final manuscript.

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Data availability
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
Ethical approval was obtained from the Institutional Review Board of the College of Health Sciences of Addis Ababa University (Reference number: 028/18/Psy) and King's College London (Reference number: HR-17/18-6570). Written informed consent was obtained from each participant. Participants who scored ten or above on the PHQ-9 and/or reported suicidality on the ninth question were referred to their health worker for follow-up by a member of staff trained in mental health care. Women who disclosed intimate partner violence were provided with contact details of governmental organizations able to provide support.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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