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Self-reported provision of person-centred maternity care among providers in Kenya and Ghana: scale validation and examination of associated factors

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ABSTRACT

Introduction Person-centred maternity care (PCMC), which refers to care that is respectful and responsive to women's preferences needs, and values, is core to high-quality maternal and child health. Provider-reported PCMC provision is a potentially valid means of assessing the extent of PCMC and contributing factors. Our objectives are to assess the psychometric properties of a provider-reported PCMC scale, and to examine levels and factors associated with PCMC provision.

Methods We used data from two cross-sectional surveys with 236 maternity care providers from Ghana (n=150) and Kenya (n=86). Analysis included factor analysis to assess construct validity and Cronbach's alpha to assess internal consistency of the scale; descriptive analysis to assess extent of PCMC and bivariate and multivariable linear regression to examine factors associated with PCMC.

Findings The 9-item provider-reported PCMC scale has high construct validity and reliability representing a unidimensional scale with a Cronbach's alpha of 0.72. The average standardised PCMC score for the combined sample was 66.8 (SD: 14.7). PCMC decreased with increasing report of stress and burnout. Compared with providers with no burnout, providers with burnout had lower average PCMC scores (β: −7.30, 95% CI:−11.19 to −3.40 for low burnout and β: −10.86, 95% CI: −17.21 to −4.51 for high burnout). Burnout accounted for over half of the effect of perceived stress on PCMC.

Conclusion The provider PCMC scale is a valid and reliable measure of provider self-reported PCMC and highlights inadequate provision of PCMC in Kenya and Ghana. Provider burnout is a key driver of poor PCMC that needs to be addressed to improve PCMC.

Key questions

What is already known?

- Several studies based on interviews with women have identified that person-centred maternity care (PCMC) is inadequate across different contexts with documentation of disrespect and abuse, poor communication, lack of respect for women's autonomy and lack of social and emotional support.
- Fewer studies, mostly qualitative, have examined provider's reports of PCMC.

What are the new findings?

- We present a valid and reliable scale for measuring provider-reported PCMC.
- Consistent with women's reports, provider reports highlight significant gaps in PCMC, with the biggest gaps in the communication and autonomy domains.
- Provider burnout is a key driver of poor PCMC.

What do the new findings imply?

- Provider's reports of PCMC is a complementary and potentially easier approach to assessing and monitoring the extent of PCMC and to examine provider-level and facility-level factors that might affect individual provider's provision of PCMC.
- We need interventions to improve PCMC, particularly related to effective communication and respect for women's autonomy.
- To improve PCMC, we need to prevent and manage provider burnout.

INTRODUCTION

Person-centred maternity care (PCMC) has risen to the top of the global discourse on quality of maternity care due to extensive documentation of disrespect, abuse and neglect of women during childbirth in health facilities globally.[1–3] PCMC refers to maternity care that is respectful and responsive to individual women and their families' preferences, needs and values, adapted from the Institute of Medicine's definition of person-centred care.[4 5] PCMC thus encompasses both responsive and respectful maternity care and emphasises treating patients with dignity and respect, effective communication, involving patients in all decisions about their health and ensuring continuity in care.

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Poor PCMC manifests as mistreatment of women during prenatal clinic visits and childbirth. Such mistreatment has both direct and indirect effects on maternal and neonatal outcomes through various pathways; these include women not seeking care during and after childbirth and delayed, inadequate and unnecessary care.[1 6] Poor PCMC is also associated with poorer maternal physical and psychological health, as well as newborn health.[7–10] Most importantly, poor PCMC manifested as disrespect and abuse is a violation of women's human rights.[11 12]

Several studies have documented gaps in PCMC based on interviews with women using various tools developed for this purpose.[2 3 13–17] Among the few validated tools for measuring women's childbirth experiences is the PCMC scale which has domains for communication and autonomy, dignity and respect and supportive care. Studies based on this scale have identified gaps in these domains, particularly in the communication and autonomy domain. For example, a prior study using the PCMC scale in Kenya, Ghana and India found that PCMC scores across these settings were less than 70 out of 100, with scores in the communication and autonomy domain being less than 60 out of 100 across the settings, and with scores as low as 30 for the Ghana sample.[2] This as well as other studies have identified patient-level factors associated with PCMC such as socioeconomic status, age, marital status, race, ethnicity, among others.[3 18 19] These studies have also identified facility-level factors associated with PCMC, with several studies showing women who give birth in lower-level facilities such as health centres receive higher PCMC than those who give birth in the higher-level facilities.[2 13 20]

Fewer studies have examined provider-reports of PCMC, which is expected, given PCMC should centre on the experiences of the birthing person.[21–23] Providers reports of their provision of PCMC is however a complementary and potentially more feasible approach to assessing the extent of PCMC. In addition, provider self-reports provide an opportunity to examine provider and facility-level factors that might affect individual provider's provision of PCMC and better inform interventions. There are however no published validated scales for this purpose. Previous studies based on qualitative interviews have identified several factors that might affect providers' provision of PCMC. These include provider's age, years of experience, stress, burnout, training, supervision and facility environment.[21–23] A quantitative relationship between these factors and PCMC is plausible based on the general literature on patient–provider interactions,[24 25] but this relationship has not been examined quantitatively in the context of PCMC. In this study, we sought to bridge the gap on measurement of PCMC from the provider perspective and to extend the literature on factors associated with PCMC, to help inform interventions to provide respectful and responsive care during childbirth.

Our objectives were to: (1) assess the psychometric properties of a scale for measuring provider's self-reported PCMC provision; (2) examine PCMC levels based on provider self-report and (3) examine individual and facility-level factors that affect a provider's self-report of PCMC.

METHODS

Study design and participants

We used data from two cross-sectional surveys with healthcare providers who work in maternity units in Kenya and Ghana. Eligible respondents in both countries were doctors, clinical officers, midwives, nurses and support staff who worked in maternity units at the time of the survey. The sample size for both settings was based on the feasibility of reaching at least half of the providers in the study area.

Setting and data collection

The Kenya data are from Migori County in western Kenya, and is described in detail elsewhere.[26 27] The county is divided into eight subcounties, each of which has a subcounty hospital, in addition to several health centres. There is one county hospital that serves as the referral hospital for the county. The healthcare worker (HCW)-patient ratio is 4 doctors and 32 nurses per 100 000 people.[28] Data were collected from June to September 2019 with 101 providers recruited from 30 health facilities with the highest recorded births in the county out of 85 facilities that conducted at least 100 deliveries the previous year. Two female Kenyan staff recruited providers who were available at the time of the visit and conducted one-on-one interviews in English, Swahili or Luo in private locations at the facility using a structured questionnaire. Interviews lasted about 40–60 min. All participants provided written informed consent, and each received an incentive of 300 Kenyan shillings (~$3). The response rate was 100%. Ethics approval was obtained from the Institutional Review Boards of the Kenya Medical Research Institute and the University of California, San Francisco (UCSF), with additional approvals from the Kenya National Commission for Science, Technology and Innovation and the Migori County Commissioner and Director of Health.

The Ghana data are from the Upper East Region (UER). The region is divided into 15 administrative municipalities/districts, of which 10 have district hospitals. The regional hospital serves as the referral facility in the region. The HCW-patient ratio is about 4 doctors and 200 nurses per 100 000 people (1:27 652 doctor–patient and 1:500 nurse–patient ratios).[29] Data were collected from October 2020 to January 2021 with 152 providers recruited from 19 facilities with the highest recorded births in the region out of 94 facilities that conduct at least 100 deliveries per year. One female and one male Ghanaian staff recruited providers who were available at the time of the visit and conducted the one-on-one

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interviews in English in private locations at the facility using a structured questionnaire. Interviews lasted between 50 and 55 min. All participants provided written informed consent, and each received an incentive of 12 Ghana cedis (~$2). Response rate was about 80%. Ethics approval was obtained from the of the Navrongo Health Research Centre Institutional Review Board and that of UCSF, with additional approval from the UER Director of Health Services.

Measures

Dependent-variable: PCMC score

PCMC was measured by asking providers nine questions: if in the last month, they had introduced themselves to patients when they first met; called patients by their name when talking to them; explained the purpose of examinations and procedures to the patient; explained the purpose of medications; asked patients if they had any questions; allowed women to have a birth companion of their choice; allowed women to give birth in a position of their choice; shouted at, scolded or threatened a woman for any reason (verbal abuse) and pinched, hit or physically restrained a woman for any reason (physical abuse). Each question had four frequency response options: no, never (0); yes, a few times (1); yes, most of the time (2); yes all the time (3) (questions in online supplemental table S1). These questions were adapted from the PCMC scale, which is validated for interviews with women,[5] and improved based on lessons learnt from its previous application in a mixed-methods study in the same setting.[21 23 30 31] The scale included items that we found in the previous work to have more variation in responses and more closely aligned with women's reports. We chose these items because they were less likely to be prone to social desirability bias. For example, more subjective and less specific questions such as whether they treat patients in a respectful and friendly manner were removed because of a lack of variability in these responses. In addition, we reworded the physical and verbal abuse questions in a way that made providers comfortable reporting on these behaviours. We also, limited the reporting period to the last month, to measure recent behaviour and reduce recall bias. Responses to the nine questions are added to create the PCMC score.

Independent-variables

We included items that had been shown or theorised to be associated with PCMC in previous studies. These included the following.

Demographics

We included questions on age, gender, marital status, parity, years of experience, education, perceived social status and religion.

Work conditions

We included questions on the number of days they work per week, work hours per day, perceived stress, burnout, general satisfaction with their job and the nature of interpersonal interactions with supervisors, colleagues and patients. *Perceived stress* was measured with the 10-item Cohen perceived stress scale (PSS) on people's feelings and thoughts in the past month.[32] Questions capture how nervous or stressed, unpredictable, uncontrollable and overloaded respondents find their lives, with each question on a scale of 0 (never) to 4 (very often). The PSS score ranges from 0 to 40. Scores of 0–13 are considered low stress, 14–26 moderate stress and 27–40 high perceived stress.[32] *Burnout* was measured using the 14-item Shirom-Melamed Burnout measure (SMBM) on feelings at work in the past month.[33] Questions capture three domains: physical fatigue, emotional exhaustion and cognitive weariness, with response options ranging from 1 (never or almost never) to 7 (always or almost always). Summative scores range from 1 to 7. Commonly used cut-offs are ≤2.0 as no burnout, 2.1–3.74 as low burnout and ≥3.75 as high burnout.[34] Both the PSS and SMBM have undergone substantial testing in different settings and shown to have strong evidence for validity and reliability.[35 36] *Interpersonal interaction with supervisors, colleagues and patients* were measured by three questions asking if in the last year they had been treated in a way that was disrespectful by their supervisors, colleagues and patients. Additionally, we included questions on job satisfaction *prior training on stress and patient–provider interactions.*

Facility-level variables

These included the facility type, number of deliveries, number of providers in the unit, availability of drugs and supplies and several other variables shown in online supplemental table S2.

Statistical analysis

The analytic sample for Kenya is 86 and that from Ghana 150 and includes only respondents that provided clinical services (thus excluding most of the support staff). Data for the two countries were merged in STATA V.15 for the analysis. We used descriptive statistics (means and proportions) to examine the characteristics of the sample and the distribution of the study variables. We then conducted factor analysis of the PCMC, perceived stress and burnout items to assess construct validity and Cronbach's alpha to assess internal consistency reliability, before generating summative scores used in subsequent analysis. The PCMC scores were approximately normally distributed, so untransformed scores are used for the bivariate and multivariable regression analysis. Only variables that were statistically significant at a p-values of <05 in the bivariate analysis were included in the multivariable models unless there was strong theoretical rationale for their inclusion. Models were tested for model fit. In the model building process, we included country-level and facility-level random components. But the ICC values were negligible. We therefore present the results of the simple linear regression models, which are similar to that from the multilevel model. We conducted various

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sensitivity analysis to examine model fit and stratified the analysis by country. A structural equation model was applied to ascertain if burnout mediated the effect of perceived stress on PCMC.

RESULTS

The sample characteristics are presented in table 1. Most respondents were nurses and midwives (72.1% in Kenya and 96.7% in Ghana), worked in a government facility (40.7 in Kenya and 61.3% in Ghana) and were female (57.0% in Kenya and 97.3% in Ghana). The Cronbach alpha for the perceived stress and burnout scales were 0.68 and 0.86, respectively. Most respondents had moderate perceived stress levels: 86.1% among those from Kenya and 56.7% for Ghana. Over two-thirds were experiencing burnout; low and high burnout rates were 65.1% and 18.6%, respectively, among those in Kenya and 60.0% and 5.3% among those from Ghana. Over 80% of the providers in both countries reported they had never been trained on how to deal with stress. Distribution of the facility-level variables is shown in online supplemental table S2. Most of the facilities had no doctor working in the maternity unit. In Kenya, the facilities had a median of two clinical providers on duty during the day and one at night, and for Ghana, there were about three to four providers on duty during the day and three at night.

The distribution of the individual PCMC items is presented in figure 1 and online supplemental table S3. For example, 91% and 79% of respondents in Kenya and Ghana, respectively, reported they had not always introduced themselves to patients in the last month. Also, over half across both samples had not always referred to patients by name and had not always explained the purpose of examinations and procedures to women in the last month. Factor analysis of the nine items yielded 1 factor with eigenvalue greater than 1 (eigenvalue=2.3), accounting for 100% of the cumulative variances, suggesting a unidimensional scale (online supplemental figure 1). All items loaded at >0.3 on this factor, except the item on companionship with which had a factor loading of 0.23. Cronbach's alpha for all nine items was 0.72. Dropping the companionship question did not significantly increase Cronbach's alpha, thus all the items were summed to create the composite PCMC score ranging from 0 to 27, which is then standardised by dividing by 27 (the maximum possible score) and multiplied by 100 to get a range of 0–100. The average standardised PCMC score was 66.8 (SD: 14.7), with a score of 58.9 (SD: 15.1) among the Kenya health workers and 71.3 (SD: 12.3) among those in Ghana.

Table 2 shows the bivariate associations between PCMC and potential correlates for the combined sample. Healthcare providers with low stress reported higher PCMC (74.0), than those with moderate (63.7) and high stress (66.3). Similarly, those with no burnout reported higher PCMC (75.0) than those with low (64.5) and high burnout (57.9). HCWs with training on stress management and interpersonal interactions had higher PCMC scores than those without such training. The key facility-level predictors of PCMC were the number of clinical providers available to work in the maternity unit, and usually on duty during the day (online supplemental table S4).

The multivariable analysis is shown in table 3. Controlling for other factors, excluding burnout, providers with moderate perceived stress had about six points lower PCMC scores than those with low perceived stress (β=−6.13, 95% CI: −9.99 to −2.28). This association was, however, no longer significant when burnout was included in the model. Compared with providers with no burnout, providers with low burnout had, on average, about seven points lower PCMC scores (β=−7.30, 95% CI: −11.19 to −3.40), while those with high burnout had over 10 points lower scores (β=−10.86, 95% CI: −17.21 to −4.51). Training on how to deal with stress was associated with about five points higher PCMC score (β=4.87, 95% CI: 0.39 to 9.36). Compared with providers who worked in the government hospital, those who worked in a government health centre had over six points higher PCMC scores (β=6.83, 95% CI: 2.56 to 11.09), while those in mission or private hospitals had over four points higher PCMC scores (β=4.84, 95% CI: 0.09 to 9.59). Each unit increase in the number of providers on duty during the day was associated with a half a point increase in the PCMC score (β=0.45, 95% CI: 0.01 to 0.88).

In the analysis stratified by country (table 4), burnout is associated with PCMC in both countries, but the effect size is bigger with the Kenya sample. The effect of stress management training and facility type was only significant in the Ghana sample, while the effect of the number of providers on duty was significant for the Kenya sample.

The results from the structural equation model (online supplemental table S5) show that perceived stress was significantly associated with both burnout (β=1.01; CI: 0.78 to 1.25) and PCMC (β=–0.57, 95% CI :–0.87 to −0.26). Most of the effect of stress on PCMC was however through burnout, with a greater indirect (β=–0.33; CI: −0.50 to −0.16) than direct effect (β=–0.24; CI: −0.56 to 0.09). Burnout therefore mediates over half (0.33/0.57*100=57%) of the effect of perceived stress on PCMC, supporting the hypothesis that prolonged stress leads to burnout, which leads to poor PCMC.

DISCUSSION

We present a scale for provider self-reported provision of PCMC that has high validity and reliability in a sample of maternity providers in Kenya and Ghana. Based on this scale, we found that many providers do not consistently provide PCMC. The key factors associated with self-reported PCMC provision are perceived stress, burnout, training on stress management, facility type and number of staff on duty in the maternity unit. The effect of perceived stress on PCMC provision is mediated by burnout, highlighting the need to prevent burnout

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Table 1 Summary characteristic of the study participants by country (n=236)

Characteristics	Category	Country		P value
		Kenya (n=86)	Ghana (n=150)	
Position	Nurse/midwife	62 (72.1)	145 (96.7)	<0.001
	Doctor/clinical officer	16 (18.6)	0 (0.0)	
	Other	8 (9.3)	5 (3.3)	
Facility type	Govt. hospital	35 (40.7)	92 (61.3)	0.001
	Govt. health centre	39 (45.4)	32 (21.3)	
	Mission/private hospital	12 (13.9)	26 (17.3)	
Gender	Male	37 (43.0)	4 (2.7)	<0.001
	Female	49 (57.0)	146 (97.3)	
Age	Mean (SD)	33.45 (6.88)	33.65 (7.10)	
	23–29 years	31 (36.1)	43 (28.7)	0.22
	30–39 years	38 (44.2)	84 (56.0)	
	40–59 years	17 (19.7)	23 (15.3)	
Marital status	Currently married	64 (74.4)	111 (74.0)	0.94
	Single	22 (25.6)	39 (26.0)	
Number of children (Kenya n=85)	No children	22 (25.9)	35 (23.3)	0.012
	1–3	49 (57.7)	107 (71.3)	
	4 or more	14 (16.5)	8 (5.3)	
Educational attainment	Less than college	3 (3.5)	1 (0.7)	0.14
	College and above	83 (96.5)	149 (99.3)	
Perceived social status of family growing up	Bottom half	70 (81.4)	104 (69.3)	0.043
	Upper half	16 (18.6)	46 (30.7)	
Perceived social status of self now	Bottom half	44 (51.2)	59 (39.3)	0.078
	Upper half	42 (48.8)	91 (60.7)	
Social mobility	Upward mobility	62 (72.1)	102 (68.0)	0.54
	No change	15 (17.4)	35 (23.3)	
	Downward mobility	9 (10.5)	13 (8.7)	
Religion	Catholics	16 (18.6)	121 (80.7)	<0.001
	Others	28 (32.6)	29 (19.3)	
	Seventh Day Adventist	42 (48.8)	0 (0.0)	
Years of work as a health provider	Median (range)	6 (0–25)	7 (0–39)	0.99
	0–5 years	40 (46.5)	69 (46.0)	0.070
	6–10 years	34 (39.5)	43 (28.7)	
	More than 10 years	12 (14.0)	38 (25.3)	
Years of work at this facility	0–2 years	50 (58.1)	85 (56.7)	0.83
	3–21 years	36 (41.9)	65 (43.3)	
Workdays per week	5 or fewer days	79 (91.9)	65 (43.3)	<0.001
	More than 5 days	7 (8.1)	85 (56.7)	
Work hours per day	8 or fewer hours	55 (64.0)	123 (82.0)	<0.001
	9–10 hours days	25 (29.1)	12 (8.0)	
	More than 10 hours	6 (6.9)	15 (10.0)	
Satisfaction	Satisfied	75 (88.2)	112 (74.7)	
	Neither	6 (7.1)	13 (8.7)	0.016
	Dissatisfied	4 (4.7)	25 (16.6)	
Disrespect from supervisors	Never	56 (65.9)	90 (60.0)	0.37
	Few times	23 (27.1)	53 (35.3)	
	Several times	6 (7.1)	7 (4.7)	

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Table 1 Continued

Characteristics	Category	Country		P value
		Kenya (n=86)	Ghana (n=150)	
Disrespect from colleagues	Never	53 (61.6)	91 (61.1)	0.91
	Few times	28 (32.6)	51 (34.2)	
	Several times	5 (5.8)	7 (4.7)	
Disrespect from patients	Never	39 (45.4)	46 (30.9)	0.057
	Few times	32 (37.2)	62 (41.6)	
	Several times	15 (17.4)	41 (27.5)	
Perceived stress levels	Low stress	5 (5.8)	63 (42.0)	<0.001
	Moderate stress	74 (86.1)	85 (56.7)	
	High stress	7 (8.1)	2 (1.3)	
Burnout levels	No burnout (≤2.0)	14 (16.3)	52 (34.7)	<0.001
	Low burnout (2.1–3)	56 (65.1)	90 (60.0)	
	High burnout (≥3.75)	16 (18.6)	8 (5.3)	
Training on stress management	No	74 (87.1)	126 (84.0)	0.53
	Yes	11 (12.9)	24 (16.0)	
Training on interpersonal interactions (Kenya n=85)	No	66 (77.6)	60 (40.0)	<0.001
	Yes	19 (22.4)	90 (60.0)	

among providers working in a stressful system to improve PCMC.

To the best of our knowledge, this is the first scale on provider-self reported provision on PCMC that has been evaluated for validity and reliability. PCMC centres the woman's experience, and we recommend that women's experiences should always be measured using valid and reliable tools such as the PCMC scale. However, where this is not feasible, using the providers' self-reported PCMC scale could be a useful way of estimating the extent of PCMC in a given setting. Although there are concerns that a provider self-reported measure may be inaccurate due to social desirability bias, our findings align with client reported PCMC in similar settings.[18] In a prior study in the same Kenya facilities, the standardised PCMC score was 66 based on the 30-item PCMC scale measured from women's perspective,[2 18] which is higher than the provider score of 59. In a study in a different region of Northern Ghana, the average standardised PCMC score measured from women's perspectives was

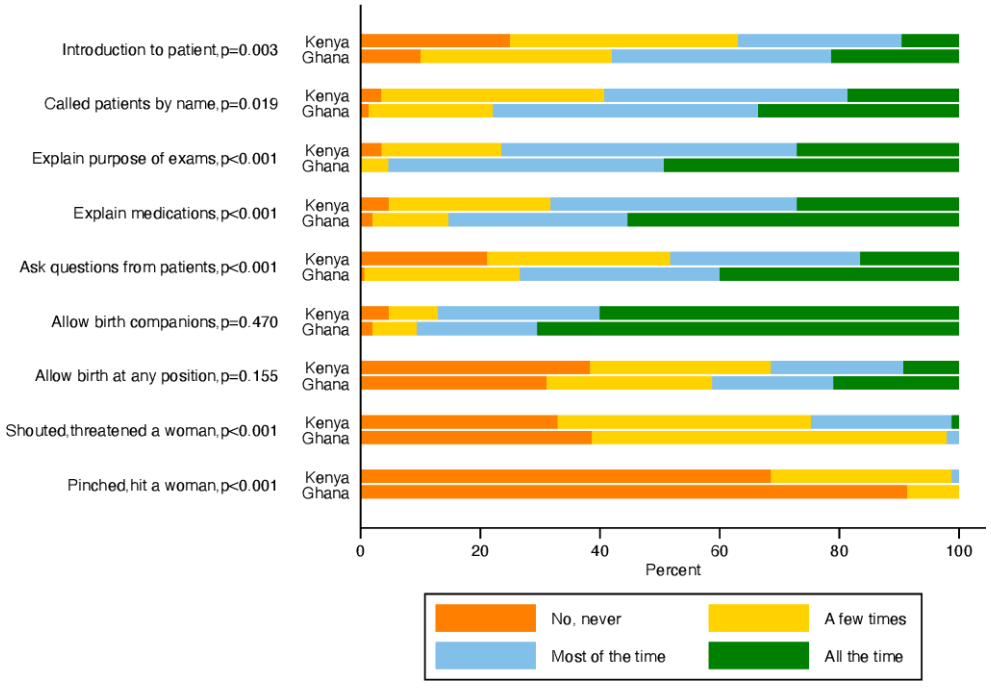

Figure 1 Distribution of PCMC items. PCMC, person-centred maternity care.

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Table 2 Crosstabulation of mean PCMC score by participant characteristics for combined sample (n=236)

Characteristics	Category	PCMC score		P value
		N	Mean (SD)	
Position	Nurse/midwife	207	66.9 (14.44)	0.75
	Doctor/clinical officer	16	64.2 (18.08)	
	Other	13	67.9 (14.66)	
Facility type	Govt. hospital	127	65.4 (14.61)	0.27
	Govt. health centre	71	67.8 (14.78)	
	Mission/private hospital	38	69.4 (14.54)	
Gender	Male	41	62.1 (16.40)	0.026
	Female	195	67.7 (14.13)	
Age	23–29 years	74	63.2 (14.74)	0.039
	30–39 years	122	68.2 (14.25)	
	40–59 years	40	69.1 (14.96)	
Marital status	Currently married	175	67.9 (14.85)	0.056
	Single	61	63.7 (13.79)	
Number of children (Kenya n=85)	No children	57	64.8 (14.16)	0.48
	1–3	156	67.5 (14.54)	
	4 or more	22	66.4 (17.27)	
Educational attainment	Less than college	4	61.6 (21.50)	0.48
	College and above	232	66.9 (14.57)	
Perceived social status of family growing up	Bottom half	174	66.7 (14.54)	0.91
	Upper half	62	66.9 (15.14)	
Perceived social status of self now	Bottom half	103	66.0 (14.52)	0.48
	Upper half	133	67.4 (14.80)	
Social mobility	Upward mobility	164	67.7 (14.05)	0.133
	No change	50	66.2 (14.88)	
	Downward mobility	22	61.1 (17.82)	
Religion	Catholics	137	70.5 (12.25)	<0.001
	Others	57	66.3 (16.28)	
	Seventh Day Adventist	42	55.3 (13.83)	
Years of work as a health provider	0–5 years	109	64.4 (14.14)	0.0070
	6–10 years	77	66.6 (15.19)	
	More than 10 years	50	72.2 (13.80)	
Years of work at this facility	0–2 years	135	66.1 (14.61)	0.39
	3–21 years	101	67.7 (14.76)	
Workdays per week	5 or fewer days	144	63.8 (14.87)	<0.001
	More than 5 days	92	71.5 (13.08)	
Work hours per day	8 or fewer hours	178	67.2 (14.10)	0.003
	9–10 hours days	37	60.8 (14.46)	
	More than 10 hours	21	74.0 (16.43)	
Satisfaction	Satisfied	187	66.4 (14.62)	0.64
	Neither	19	68.4 (15.08)	
	Dissatisfied	29	68.8 (15.07)	
Disrespect from supervisors	Never	146	67.1 (15.37)	0.26
	Few times	76	67.6 (13.34)	
	Several times	13	60.6 (9.95)	

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Table 2 Continued

Characteristics	Category	PCMC score N	PCMC score Mean (SD)	P value
Disrespect from colleagues	Never	144	67.2 (15.70)	0.42
	Few times	79	65.3 (12.49)	
	Several times	12	70.7 (15.89)	
Disrespect from patients	Never	85	68.1 (16.27)	0.51
	Few times	94	66.3 (13.86)	
	Several times	56	65.3 (13.50)	
Perceived stress levels	Low stress	68	74.0 (12.01)	<0.001
	Moderate stress	159	63.7 (14.45)	
	High stress	9	66.3 (18.74)	
Burnout levels	No burnout (≤2.0)	66	75.0 (12.12)	<0.001
	Low burnout (2.1–3)	146	64.5 (14.12)	
	High burnout (≥3.75)	24	57.9 (14.71)	
Training on stress management	No	200	65.9 (14.65)	0.032
	Yes	35	71.6 (13.98)	
Training on interpersonal interactions (Kenya n=85)	No	126	64.1 (15.27)	0·002
	Yes	109	70.1 (13.22)	
Country	Kenya	86	58.9 (15.12)	<0.001
	Ghana	150	71.3 (12.35)	

PCMC, person-centred maternity care.

52.[2 37] These data are not directly comparable, given the different time points and component items, but suggests that social desirability bias in provider self-report may not be as great as we expect and could provide a useful estimate of PCMC in a setting.

The individual items in the scale can be used to inform quality improvement. For example, we found several gaps in the items related to communication and autonomy, where less than half of providers in the Kenya sample reported often introducing themselves to patients, asking permission for examinations and procedures, asking women if they have questions and allowing women to birth in the position of their choice in the last month. This is consistent with studies with women, where major gaps were identified in communication and autonomy—highlighting the need to emphasise this domain in interventions to improve PCMC in these settings.[2] Almost 90% reported often allowing women to have a companion of their choice, which reflects recent efforts at promoting birth companionship in these settings. On the other hand, over half of the providers in Kenya acknowledged being verbally abusive in the last month, and about one out of five were physically abusive—which should be of concern and targeted for quality improvement. Furthermore, we have found in our work that asking providers these questions often allows them to self-reflect on their interactions with patients,[37 38] which by itself could be considered an intervention.

Of note, the items in this provider-reported scale do not represent the universe of items relevant to PCMC. Instead, they represent a subset of items that are more likely to yield accurate responses in a self-reported provider survey. We found more variability in provider responses to these questions in a previous study,[21 23 31] suggesting these items may be less prone to social desirability bias. The original PCMC scale for interviews with women has 30 items across the three domains of dignity and respect, communication and autonomy and supportive care. The initial adaptation of the PCMC scale for providers thus included all 30 items including questions on respect, friendliness, privacy, confidentiality, timeliness, etc. However, most providers in the study setting reported engaging in the PCMC behaviours based on these more subjective questions, hence their exclusion in this version of the scale. Given the high knowledge of respectful maternity care among providers in the county,[21 23 31] the lack of variability in the excluded items might be due to providers more readily recognising such items as components of respectful maternity care, and being unwilling to report not engaging in such behaviours. Or they may truly be providing aspects of PCMC captured by those items, hence a need to expand to the aspects of PCMC included in the provider-reported PCMC scale. Thus, in settings where PCMC is a new concept to providers, it may be useful to include more items from the women's scale to capture other aspects of PCMC. Furthermore, interventions to improve PCMC should address all components of PCMC and not just the items in the scale. The items included in the provider-reported scale were, however, correlated with other items in the original scale

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Table 3 Multivariable linear regression of PCMC score on potential predictors for combined sample (n=230)

		Model without burnout PCMC score		Model with burnout PCMC score	
Characteristics	Category	Coefficient (95% CI)	P value	Coefficient (95% CI)	P value
Cohen stress scale	Low stress	1	–	1	–
	Moderate stress	−6.13 (−9.99 to −2.28)	0.002-	−3.11 (−7.11 to 0.89)	0.13
	High stress	−1.37 (−11.07 to 8.34)	0.78	2.66 (−6.98 to 12.29)	0.59
Burnout measure	No burnout (≤2.0)	–	–	1	–
	Low burnout (2.1–3.75)	–	–	−7.30 (−11.19 to −3.40)	<0.001
	High burnout (≥3.75)	–	–	−10.86 (−17.21 to−4.51)	0.001
Training on stress management	No	1	–	1	–
	Yes	4.68 (0.07 to 9.30)	0.047	4.87 (0.39 to 9.36)	0.033
Age	23–29 years	1	–	1	–
	30–39 years	2.21 (−1.66 to 6.08)	0.26	2.31 (−1.43 to 6.06)	0.23
	40–59 years	4.71 (−0.46 to 9.89)	0.074	4.83 (−0.22 to 9.88)	0.061
Religion	Catholic	1	–	1	–
	Seventh Day Adventist	−8.33 (−14.50 to −2.16)	0·008	−7.65 (−13.63 to −1.68)	0.012
	Others	−2.30 (−6.69 to 2.08)	0.30	−1.95 (−6.22 to 2.32)	0.37
Health facility type	Govt. hospital	1	–	1	
	Govt. health centre	7.50 (3.10 to 11.89)	0.0010	6.83 (2.56 to 11.09)	0.002
	Mission/private hospital	6.70 (1.88 to 11.52)	0.007	4.84 (0.09 to 9.59)	0.046
Number of providers during day		0.41 (−0.04 to 0.86)	0.072	0.45 (0.01 to 0.88)	0.043
Country	Kenya	1	–	1	–
	Ghana	5.20 (−0.48 to 10.87)	0.073	4.55 (−0.96 to 10.06)	0.11
R^2		0.30		0.35	

PCMC, person-centred maternity care.

for women,[5] suggesting improvement in these items will likely reflect improvements in other aspects of PCMC (eg, providers may be less likely to be disrespectful when they introduce themselves).[23 37]

Our finding that burnout is a strong correlate of PCMC provision is not surprising given the established relationship between burnout and quality of care including the quality of patient provider-relationships. It is well documented that prolonged stress without adequate coping mechanisms leads to burnout, which manifests as exhaustion, cynicism, numbing, decreased empathy and detachment from the job, leading to, decreased job satisfaction, reduced commitment to the job, lower productivity and poor quality of care, including poor attitudes towards patients.[39–42] It is also recognised that providers in low-resource settings are chronically exposed to various stressors such as high workload and poor working conditions, resulting in high burnout.[26 43 44] The lower nurse-patient-ratio in Migori than in the UER,[28 29] likely contributed to the higher burnout and lower PCMC in the Kenya sample. Although previous qualitative studies have identified high stress and burnout among providers as contributing to poor PCMC,[22 26] this is the first study to empirically show this relationship—further extending evidence on the need to address provider burnout as a means to improving PCMC.

Again, it was unsurprising that those who reported having received some training on stress also reported better PCMC. It is, however, startling that only 13% and 16% of the providers in Kenya and Ghana, respectively, had ever received training on stress management. This highlights a critical gap in the psychosocial support for healthcare workers. Furthermore, only 22% of providers in the Kenya sample reported having undergone training on how to improve their interactions with patients—likely contributing to the much lower PCMC scores in Kenya compared with Ghana where 60% reported having undergone such training. This suggests the need for integration of training on both patient–provider interactions and stress management into routine in-service training for providers. Interventions to address the sources of burnout and other drivers of poor PCMC such as facility culture, lack of accountability and sociocultural factors are however needed for lasting change.[21 23 45]

One limitation of this study is social desirability bias when providers are asked to report on their own provision of PCMC. Our previous work suggests providers are more likely to report poor care about others than themselves, suggesting the findings may overestimate the extent of PCMC in these settings.[21 23] Additionally, the data were collected in different time periods, with the Ghana data collected during the COVID-19 pandemic. Although

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Table 4 Multivariable linear regression of PCMC score on potential predictors by country

Characteristics	Category	Kenya (n=80)		Ghana (n=150)	
		Coefficient (95% CI)	P value	Coefficient (95% CI)	P value
Cohen stress scale	Low stress	1	–	1	–
	Moderate stress	−8.01 (−20.26 to 4.24)	0.20	−3.47 (−7.67 to 0.74)	0.11
	High stress	−0.62 (−16.02 to 14.77)	0.94	13.12 (−6.57 to 32.80)	0.19
Burnout measure	No burnout (≤2.0)	1	–	1	–
	Low burnout (2.1–3.75)	−18.17 (−25.57 to −10.76)	<0.001	−2.83 (−7.22 to 1.56)	0.21
	High burnout (≥3.75)	−20.13 (−29.02 to −11.23)	<0.001	−11.13 (−21.69 to −0.57)	0.039
Training on stress management	No	1	–	1	–
	Yes	2.14 (−6.80 to 11.09)	0.63	5.38 (0.17 to 10.60)	0.043
Age	23–29 years	1	–	1	–
	30–39 years	−0.16 (−7.50 to 7.17)	0.97	3.46 (−1.00 to 7.92)	0.13
	40–59 years	4.85 (−4.24 to 13.93)	0.29	354 (−2.53 to 9.61)	0.25
Religion	Catholic	1	–	1	–
	Seventh Day Adventist	−8.92 (−15.99 to −1.84)	0.014	–	–
	Methodist/Presby/ Anglican	−6.28 (−14.02 to 1.46)	0.11	2.72 (−2.27 to 7.71)	0.28
Health facility type	Govt. hospital	1		1	–
	Govt. health centre	1.97 (−4.48 to 8.42)	0.54	9.96 (3.97 to 15.94)	0.001
	Mission/private hospital	−0.42 (−10.68 to 9.84)	0.94	3.00 (−2.66 to 8.65)	0.30
Number of providers during day		4.19 (0.81 to 7.58)	0.016	0.40 (−0.07 to 0.88)	0.094
R^2		0.52		0.18	

PCMC, person-centred maternity care.

globally, providers are experiencing high levels of stress and burnout during the pandemic, cases in Northern Ghana were still low during the study period. Another limitation is related to generalisability, given both samples are relatively small convenient samples from predominantly rural regions in Kenya and Ghana. Nonetheless, this is the first study to systematically examine PCMC from the provider perspective using a validated scale in two different countries. This study should provide an example for future studies to assess PCMC from the provider perspective in different settings.

CONCLUSION

This is the first study to provide evidence for the validity of a provider-reported PCMC scale and to explore correlations between self-reported provision of PCMC and perceived stress and burnout. This study thus fills a gap in the measurement of PCMC, as the scale can be used to estimate the extent of PCMC in settings where patient reports are not feasible or as a complement to reports from women. Validation of this scale in additional settings is however needed to increase its relevance across settings. The study also extends the evidence on the drivers of poor PCMC, highlighting the role of provider burnout. This study has several implications. First, asking providers to report their provision of PCMC is a useful way of assessing PCMC if steps are taken to reduce social desirability bias such as assurance of confidentiality and no reprisal. Recognising that such data will likely overestimate the extent of PCMC implies any gaps are potentially worse and need attention. Second, the identified gaps in PCMC, echoes calls for interventions to improve PCMC, particularly in the communication and autonomy domain. Third, to improve PCMC, we need to prevent and manage provider burnout, which will require training and health system interventions to address the root causes.

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Contributors PAA conceptualised the project, supervised data collection and analysis and led writing. RA supervised field work in Ghana and contributed to writing. JJN and OJO contributed to writing. JO conducted the analysis and contributed to writing. IK, BO, EN and JBKD conducted the interviews and

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contributed to writing. DW and JS reviewed and provided critical feedback. PAA is the guarantor responsible for the overall content.

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REFERENCES

1 Miller S, Abalos E, Chamillard M, *et al*. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *Lancet* 2016;388:2176–92.
2 Afulani PA, Phillips B, Aborigo RA, *et al*. Person-centred maternity care in low-income and middle-income countries: analysis of data from Kenya, Ghana, and India. *Lancet Glob Health* 2019;7:e96–109.
3 Bohren MA, Mehrtash H, Fawole B, *et al*. How women are treated during facility-based childbirth in four countries: a cross-sectional study with labour observations and community-based surveys. *Lancet* 2019;394:1750–63.
4 Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the quality chasm: a new health system for the 21st century*. Washington (DC): National Academies Press (US), 2001. http://www.ncbi.nlm.nih.gov/books/NBK222274/
5 Afulani PA, Diamond-Smith N, Golub G, *et al*. Development of a tool to measure person-centered maternity care in developing settings: validation in a rural and urban Kenyan population. *Reprod Health* 2017;14:118.
6 Bohren MA, Hunter EC, Munthe-Kaas HM, *et al*. Facilitators and barriers to facility-based delivery in low- and middle-income countries: a qualitative evidence synthesis. *Reprod Health* 2014;11:71.
7 Ayers S, Bond R, Bertullies S, *et al*. The aetiology of post-traumatic stress following childbirth: a meta-analysis and theoretical framework. *Psychol Med* 2016;46:1121–34.
8 Raj A, Dey A, Boyce S, *et al*. Associations between mistreatment by a provider during childbirth and maternal health complications in Uttar Pradesh, India. *Matern Child Health J* 2017;21:1821–33.
9 Sudhinaraset M, Landrian A, Afulani PA, *et al*. Association between person-centered maternity care and newborn complications in Kenya. *Int J Gynaecol Obstet* 2020;148:27-34.
10 Sudhinaraset M, Landrian A, Golub GM, *et al*. Person-centered maternity care and postnatal health: associations with maternal and newborn health outcomes. *AJOG Glob Rep* 2021;1:100005.
11 White Ribbon Alliance. Respectful maternity care: the universal rights of childbearing women (full charter), 2011. Available: http://www.healthpolicyproject.com/index.cfm?ID=publications&get=pubID&pubID=46 [Accessed 28 Mar 2017].
12 WHO. Prevention and elimination of disrespect and abuse during childbirth, 2015. Available: http://www.who.int/reproductivehealth/topics/maternal_perinatal/statement-childbirth/en/ [Accessed 1 Apr 2019].
13 Montagu D, Landrian A, Kumar V, *et al*. Patient-experience during delivery in public health facilities in Uttar Pradesh, India. *Health Policy Plan* 2019;34:574–81.
14 Sheferaw ED, Mengesha TZ, Wase SB. Development of a tool to measure women's perception of respectful maternity care in public health facilities. *BMC Pregnancy Childbirth* 2016;16:67.
15 Afulani PA, Diamond-Smith N, Phillips B, *et al*. Validation of the person-centered maternity care scale in India. *Reprod Health* 2018;15:147.
16 Vedam S, Stoll K, Martin K, *et al*. The mother's autonomy in decision making (MADM) scale: Patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care. *PLoS One* 2017;12:e0171804.
17 Vedam S, Stoll K, Rubashkin N, *et al*. The mothers on respect (MOR) index: measuring quality, safety, and human rights in childbirth. *SSM Popul Health* 2017;3:201–10.
18 Afulani PA, Sayi TS, Montagu D. Predictors of person-centered maternity care: the role of socioeconomic status, empowerment, and facility type. *BMC Health Serv Res* 2018;18:360.
19 Vedam S, Stoll K, Taiwo TK, *et al*. The giving voice to mothers study: inequity and mistreatment during pregnancy and childbirth in the United States. *Reprod Health* 2019;16:77.
20 Dagnaw FT, Tiruneh SA, Azanaw MM, *et al*. Determinants of person-centered maternity care at the selected health facilities of Dessie town, northeastern, Ethiopia: community-based cross-sectional study. *BMC Pregnancy Childbirth* 2020;20:524.
21 Afulani PA, Kelly AM, Buback L, *et al*. Providers' perceptions of disrespect and abuse during childbirth: a mixed-methods study in Kenya. *Health Policy Plan* 2020;35:577–86.
22 Ndwiga C, Warren CE, Ritter J, *et al*. Exploring provider perspectives on respectful maternity care in Kenya: "Work with what you have". *Reprod Health* 2017;14:99.
23 Afulani PA, Buback L, Kelly AM, *et al*. Providers' perceptions of communication and women's autonomy during childbirth: a mixed methods study in Kenya. *Reprod Health* 2020;17:85.
24 McKee KE, Tull A, Del Carmen MG, *et al*. Correlation of provider burnout with patient experience. *J Patient Exp* 2020;7:931–6.
25 Alhalal E, Alrashidi LM, Alanazi AN. Predictors of patient-centered care provision among nurses in acute care setting. *J Nurs Manag* 2020;28:1400–9.
26 Afulani PA, Ongeri L, Kinyua J, *et al*. Psychological and physiological stress and burnout among maternity providers in a rural County in Kenya: individual and situational predictors. *BMC Public Health* 2021;21:453.
27 Afulani PA, Ogolla BA, Oboke EN, *et al*. Understanding disparities in person-centred maternity care: the potential role of provider implicit and explicit bias. *Health Policy Plan* 2021;36:298–311.
28 HPP. Health policy project Kenya County health fact sheets, 2015. Available: https://www.healthpolicyproject.com/index.cfm?id=kenyaCHFS [Accessed 2 Jun 2017].
29 Ministry of Health Ghana. Holistic assessment of 2017 health sector programme of work, 2018. Available: https://www.moh.gov.gh/wp-content/uploads/2018/09/2017-Holistic-Assessment-Report_Final_09.08.2018.pdf
30 Afulani P, Kusi C, Kirumbi L, *et al*. Companionship during facility-based childbirth: results from a mixed-methods study with recently delivered women and providers in Kenya. *BMC Pregnancy Childbirth* 2018;18:150.
31 Buback L, Kinyua J, Akinyi B, *et al*. Provider perceptions of lack of supportive care during childbirth: a mixed methods study in Kenya. *Health Care Women Int* 2021;0:1–22.
32 Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav* 1983;24:385–96.

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33 Shirom A, Melamed S. A comparison of the construct validity of two burnout measures in two groups of professionals. *Int J Stress Manag* 2006;13:176–200.
34 Grossi G, Perski A, Evengård B, *et al*. Physiological correlates of burnout among women. *J Psychosom Res* 2003;55:309–16.
35 Lee E-H. Review of the psychometric evidence of the perceived stress scale. *Asian Nurs Res* 2012;6:121–7.
36 Lundgren-Nilsson Åsa, Jonsdottir IH, Pallant J, *et al*. Internal construct validity of the Shirom-Melamed burnout questionnaire (SMBQ). *BMC Public Health* 2012;12:1.
37 Afulani PA, Aborigo RA, Walker D, *et al*. Can an integrated obstetric emergency simulation training improve respectful maternity care? results from a pilot study in Ghana. *Birth* 2019;46:523–32.
38 Afulani PA, Dyer J, Calkins K, *et al*. Provider knowledge and perceptions following an integrated simulation training on emergency obstetric and neonatal care and respectful maternity care: a mixed-methods study in Ghana. *Midwifery* 2020;85:102667.
39 Public Health England. Interventions to prevent burnout in high risk individuals: evidence review - Publications - GOV.UK, 2016. Available: https://www.gov.uk/government/publications/interventions-to-prevent-burnout-in-high-risk-individuals-evidence-review [Accessed 26 Oct 2016].
40 Halbesleben JRB. *Handbook of stress and burnout in health care*. 3 edn. New York: Nova Science Pub Inc, 2008.
41 Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol* 2001;52:397–422.
42 Bloom SL. Organizational Stress and Trauma-Informed Services. In: Levin BL, Becker MA, eds. *A Public Health Perspective of Women's Mental Health*. Springer New York, 2010: 295–311.
43 Filby A, McConville F, Portela A. What prevents quality midwifery care? A systematic mapping of barriers in low and middle income countries from the provider perspective. *PLoS One* 2016;11:e0153391.
44 John M Mburu DAK. Burnout syndrome among medical workers at Kenyatta national Hospital (KNH), Nairobi, Kenya. *J Psychiatry* 2014;17.
45 Warren CE, Njue R, Ndwiga C, *et al*. Manifestations and drivers of mistreatment of women during childbirth in Kenya: implications for measurement and developing interventions. *BMC Pregnancy Childbirth* 2017;17:102.

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