

Web Appendix A. Closed-ended questions constructs building

In the *first* step, two experts grouped and labelled indicators based on their thematic similarities (e.g. questions about information provision to women at the different stages of care were grouped under the same construct *Information*). In the *second* step, the coherence of the measurement scales for indicators within each construct was checked. Indicators that did not fit into the prevailing measurement scale for a given construct were moved to a separate construct. As a result, the 11 factors were selected for the further analysis (Table A.1). (1) *Information* (8 items) – covers the provision of best available information by the healthcare service to enable women to make informed decisions about their care. (2) *Involvement in decisions about your care* (5 items) – covers the empowering women to participate in their own care decisions, as well as support in making decisions about infant feeding (breastfeeding/formula/bottle). (3) *Respect and Dignity* (3 items) – covers ensuring women's right to be treated with respect, courtesy and consideration, such as through listening and addressing concerns. (4) *Attention* (4 items) – covers providing women with adequate care by trained and qualified health professionals who are involved in every step of care during delivery. (5) *Confidence and Trust* (3 items) – covers supporting the development of a relationship of trust between a woman and her health care providers. (6) *Communication* (8 items) – covers establishing and maintaining effective, adapted to the stage of women's care and circumstances, communication systems between all health workers, women and their families and these systems. (7) *Responsiveness* (2 items) – covers ensuring that maternity care providers are sensitive and responsive to the broad spectrum of circumstances that impact on the health and wellbeing of women and their babies. (8) *Involvement of partner and/or companion* (1 item) – covers providing services and programs to encourage women to have a partner or person by their side to help them make informed decisions about their care, and to actively participate where possible, such as in decision-making processes in the ward and during delivery. (9) *Pain management* (1 item) – covers providing all available options for pain relief during childbirth, as well as information about the features of their impact. (10) *Personal circumstances* (1 item) – covers the provision of maternity care based on the woman's personal choice, combined with the assessed needs of the woman or her child. (11) *Clarity of explanation* (1 item) – covers clearly explaining to women all examinations and procedures, providing answers to questions, discussing and explaining examination results and test results, including discussion of options and potential risks arising from decisions.

Table A.1. Measurement Items of Constructs

#	Dimension	Stage	Items	Description	Scale
1	Information	<i>Pregnancy</i>	INF_1_Pr	Thinking about the care you received during your pregnancy, did you receive enough information about physical changes in your body?	5
		<i>Pregnancy</i>	INF_2_Pr	Thinking about the care you received during your pregnancy, did you receive enough information about mental health changes that may occur?	5
		<i>Pregnancy</i>	INF_3_Pr	Thinking about the care you received during your pregnancy, did you receive enough information about nutrition during pregnancy?	5
		<i>Pregnancy</i>	INF_4_Pr	Thinking about the care you received during your pregnancy, did you receive enough information about giving up smoking and other tobacco related products (e-cigarettes, vaping devices etc)?	5

#	Dimension	Stage	Items	Description	Scale
		<i>Pregnancy</i>	INF_5_Pr	Thinking about the care you received during your pregnancy, did you receive enough information about the impact of alcohol and/or drug abuse on you and your baby?	5
		<i>After the birth</i>	INF_6_B	Before you were discharged from hospital, were you given information about your own physical recovery?	5
		<i>After the birth</i>	INF_7_B	Before you were discharged from hospital, were you given information about any changes you might experience with your mental health?	5
		<i>Care at home after the birth</i>	INF_8_H	Since the birth of your baby, did you feel that you were adequately informed about vaccinations?	5
2	Involvement in decisions about your care	<i>Pregnancy</i>	INV_D_1_Pr	Thinking about the care you received during your pregnancy, did you feel that you were involved in decisions about your care?	4
		<i>Labour and birth</i>	INV_D_2_LB	Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?	4
		<i>After the birth</i>	INV_D_3_B	Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that you were involved in decisions about your care?	4
		<i>Feeding baby</i>	INV_D_4_BB	Were your decisions about how you wanted to feed your baby respected by your health care professionals?	4
		<i>Care at home after the birth</i>	INV_D_5_H	Thinking about the care you received at home after the birth of your baby, did you feel that you were involved in decisions about your health?	4
3	Respect and Dignity	<i>Pregnancy</i>	DEGN_1_Pr	Thinking about the care you received during your pregnancy, did you feel that you were treated with respect and dignity?	4
		<i>After the birth</i>	DEGN_2_B	Thinking about the care you received in hospital, did you feel that you were treated with respect and dignity?	4
		<i>Care at home after the birth</i>	DEGN_3_H	Thinking about the care you received at home after the birth of your baby, did you feel that you were treated with respect and dignity?	4
4	Attention	<i>Care at home after the birth</i>	ATT_1_H	Thinking about the care you received at the postnatal check-up, did the GP or practice nurse/midwife spend enough time talking to you about your own mental health?	5
		<i>Care at home after the birth</i>	ATT_2_H	Thinking about the care you received at the postnatal check-up, around 6 weeks after the birth, did the GP or practice nurse/midwife spend enough time talking to you about your own physical health?	5
		<i>Care at home after the birth</i>	ATT_3_H	Thinking about the care you received at the postnatal check-up, around 6 weeks after the birth, did the GP or practice nurse/midwife spend enough time talking to you about your own physical health?	5
		<i>Labour and birth</i>	ATT_4_H	Were you (and/or your partner or companion) left alone by health care professionals at a time when it worried you?	5

#	Dimension	Stage	Items	Description	Scale
5	Confidence and Trust	<i>Pregnancy</i>	CON_TR_1_Pr	Thinking about the care you received during your pregnancy, did you have confidence and trust in the health care professionals treating/caring for you?	4
		<i>Labour and birth</i>	CON_TR_2_LB	Did you have confidence and trust in the health care professionals caring for you during your labour and birth?	4
		<i>Care at home after the birth</i>	CON_TR_3_H	Thinking about the care you received at home after the birth of your baby, did you have confidence and trust in the health care professionals caring for you?	4
6	Communication	<i>Pregnancy</i>	COM_1_Pr	Thinking about the care you received during your pregnancy, were your questions answered in a way that you could understand?	5
		<i>Pregnancy</i>	COM_2_Pr	Thinking about the care you received during your pregnancy, did you have a health care professional that you could talk to about your worries and fears?	5
		<i>Labour and birth</i>	COM_3_LB	Thinking about the care you received during your labour and birth, were your questions answered in a way that you could understand?	5
		<i>After the birth</i>	COM_4_B	After your baby was born, did you have the opportunity to ask questions about your labour and the birth (often called 'debriefing')?	5
		<i>After the birth</i>	COM_5_B	Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that your questions were answered in a way that you could understand?	5
		<i>After the birth</i>	COM_6_B	Thinking about the care you received after the birth of your baby while you were in hospital, did you have a health care professional that you could talk to about your worries and fears?	5
		<i>Care at home after the birth</i>	COM_7_H	Did you feel that your questions were answered by the public health nurse in a way that you could understand?	5
		<i>Care at home after the birth</i>	COM_8_H	Did you feel that your questions were answered by the GP or practice nurse/midwife in a way that you could understand?	5
7	Responsiveness	<i>After the birth</i>	RES_1_B	If you needed assistance while you were in hospital after the birth, were you able to get a health care professional to assist you when you needed it?	5
		<i>Care at home after the birth</i>	RES_2_H	Did you receive help and advice from the public health nurse about your baby's health and progress?	5
8	Involvement of partner and/or companion	<i>Pregnancy</i>	INV_PC_1_Pr	Was your partner and/or companion involved in your care during labour and birth as much as you wanted them to be?	5
9	Pain management	<i>Labour and birth</i>	P_1_LB	Do you think your health care professionals did everything they could to help manage your pain during labour and birth?	6

#	Dimension	Stage	Items	Description	Scale
10	Personal circumstances	Care at home after the birth	PA_1_H	Did the public health nurse take your personal circumstances into account when giving you advice?	4
11	Clarity of explanation	<i>Labour and birth</i>	PR_TR_1_LB	Before you had any tests, procedures and treatments, were the benefits and risks explained to you in a way you could understand?	4

The closed-ended questions measure women's service experience using a 3-, 4-, 5-, or 6-point scale. For example, women's experiences of getting satisfying answers to questions during pregnancy is measured by the following 5-point scale: 1="Yes, always"; 2="Yes, sometimes"; 3="No"; 4="I did not have any questions"; 5="Don't know or can't remember". Before conducting analysis, all 37 indicators, selected for our study, were *pre-processed* in a two-stage procedure. In the *first* stage, the collected NMES answers were re-coded using reverse rules that allow us: (i) to assign higher scores to answers that characterize a higher level of experience described in the question; (ii) to neutralize the importance of answer options related to the lack of described experience, or answer "Don't know or can't remember"; and (iii) emphasize the low level of the answer "no", indicating the presence of a negative experience. A complete list of developed rules for recoding an indicator measurement scale is documented in Table A.2.

Table A.1. The List of rules for recoding an indicator's measurement scale

Answers	Initial code	Reversed code
5-point scale		
<i>Question example: "Thinking about the care you received during your pregnancy, were your questions answered in a way that you could understand? "</i>		
"Yes, always"	1	5
"Yes, sometimes"	2	4
"No"	3	1
"I did not have any questions"	4	3
"Don't know or can't remember"	5	-999 (as an empty value)
4-point scale		
<i>Question example: Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?"</i>		
"Yes, always"	1	4
"Yes, sometimes"	2	3
"No"	3	1
"Don't know or can't remember"	4	-999
3-point scale		
<i>Question example: "Before you were discharged from hospital, were you told who to contact if you were worried about your health or your baby's health after you left hospital?"</i>		
"Yes "	1	1
"No"	2	0
"Don't know or can't remember"	3	-999
6-point scale		
<i>Question example: "Do you think your health care professionals did everything they could to help manage your pain during labour and birth?"</i>		
"Yes, definitely"	1	5
"Yes, to some extent"	2	4

"No"	3	1
"I did not need any help"	4	3
"Not relevant to my situation"	5	-999
"Don't know or can't remember"	6	-999

In the *second* stage, the indicators for which the number of non-empty values exceeded 20% were removed and then, all empty answers were re-coded (-999). The internal consistency reliability of received constructs was assessed using Cronbach's alpha (α) and Composite Reliability (CR) (Table A.3.).

Table A.3. Validity and Reliability of Constructs

Construct and item	Mean (SD)	Cronbach's Alpha ^b
ATT: Attention		0.811
ATT_1_H	3.365 (1.635)	
ATT_2_H	3.650 (1.613)	
ATT_3_H	3.532 (1.641)	
ATT_4_H	3.690 (1.615)	
COM: Communication		0.729
COM_1_Pr	4.657 (0.705)	
COM_2_Pr	4.239 (1.228)	
COM_3_LB	4.582 (0.907)	
COM_4_B	3.462 (1.577)	
COM_5_B	4.495 (0.971)	
COM_6_B	4.091 (1.287)	
COM_7_H	4.784 (0.626)	
COM_8_H	4.543 (0.927)	
CON_TR: Confidence & Trust		0.541
CON_TR_1_Pr	3.660 (0.626)	
CON_TR_2_LB	3.771 (0.577)	
CON_TR_3_H	3.627 (0.653)	
INF: Information		0.744
INF_1_Pr	3.851 (1.375)	
INF_2_Pr	3.337 (1.637)	
INF_3_Pr	3.931 (1.354)	
INF_4_Pr	3.971 (1.088)	
INF_5_Pr	4.029 (1.184)	
INF_6_B	4.331 (1.080)	
INF_7_B	4.007 (1.381)	
INF_8_H	4.693 (0.764)	
INV: Involvement		0.679
INV_D_1_Pr	3.436 (0.844)	
INV_D_2_LB	3.446 (0.920)	
INV_D_3_B	3.440 (0.892)	
INV_D_4_BB	3.619 (0.788)	
INV_D_5_H	3.737 (0.607)	
DIGN: Respect & Dignity		0.582
DIGN_1_Pr	3.770 (0.539)	
DIGN_2_B	3.646 (0.717)	
DIGN_3_H	3.856 (0.456)	
RES: Responsiveness		0.161
RES_1_B	4.218 (1.075)	
RES_2_H	4.766 (0.595)	
CL_EX: Clarity of explanation		1

<i>PR_TR_I_LB</i>	3.631 (0.766)	
INV_PC: Involvement of partner companion		1
<i>INV_PC_I_Pr</i>	4.885 (0.530)	
PM: Pain management		1
<i>P_I_LB</i>	4.398 (1.139)	
PA: Personal circumstances		1
<i>PA_I_H</i>	3.776 (0.582)	