Online Appendix 1

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Note: This is Online Appendix 1 of Ukoha WC, Mtshali NG, Adepeju L. Current state of preconception care in sub-Saharan Africa: A systematic scoping review. Afr J Prm Health Care Fam Med. 2022;14(1), a3096. https://doi.org/10.4102/phcfm.v14i1.3096. This Online Appendix 1 is now updated to include Table 1-A1. The publisher apologises for this error. The correction does not change the study's findings of significance or overall interpretation of the study's results or the scientific conclusions of the article in any way.

Table 1-A1: Summary of included studies examining preconception care knowledge, utilisation, and provision in sub-Saharan Africa.

Author and date	Location of the study	Aim of the study	Study design	Target Population and Sample Size	Quality appraisal score (%)	Study findings
Preconception care knowledge and utilization among women						
Abrha et al. 2020	Ethiopia	To assess the level of women's awareness and associated factors of preconception care service in Northern Ethiopia.	A quantitative, Community-based cross-sectional survey	Recently delivered women in the selected community. 564 women	100%	Preconception care awareness was low at 39%, and only 18.2% have used at least one component of PCC. The study also reveals factors associated with awareness of PCC, such as having a combined discussion with the partner, previous history of adverse pregnancy outcomes, and receiving support from the husband.
Ahmed et al. 2015	Sudan	To study knowledge, attitude, and practice of preconception care among Sudanese reproductive-	A quantitative hospital-based cross-sectional survey.	Women of reproductive age with rheumatic heart disease in the selected hospital.	90%	There was a low PCC knowledge level at 11%, and low PCC utilization as less than half of the women have received PCC counselling, and most

		age women with rheumatic heart disease.		100 women		of them were not on any form of contraception.
Akanbi and Oluwatosin 2019	Nigeria	To evaluate nurses' knowledge and pregnant women's awareness of preconception care interventions.	A quantitative descriptive cross-sectional survey	Multigravid pregnant women from three healthcare facilities. 298 women	100%	The PCC awareness was low among women at 17%. Factors that influence PCC awareness among women are study settings.
Akinajo et al. 2019	Nigeria	To determine the level of awareness, knowledge, and practice of women on PCC.	A quantitative descriptive cross-sectional survey	Pregnant women at the ANC clinic. 50 women.	90%	The awareness of the PCC concept was high among women at 76%, but the knowledge of PCC components was low. PCC Utilization was high at 86.8% among those aware of PCC.
Asresu et al. 2019	Ethiopia	To assess the utilization and determinants of preconception care among recently delivered mothers.	A quantitative community-based cross-sectional survey	Recently delivered women in the selected community. 564 women.	100%	There was low PCC utilization as only 18.2% have practiced at least one PCC component. Knowledge of PCC, the experience of adverse birth outcomes, or have chronic conditions and support from husband increases utilization of PCC.
Awodire 2016	Nigeria	To assess the knowledge and practice of preconception care among final year female undergraduate students at the federal university of technology Akure.	A quantitative descriptive cross-sectional survey.	Final year female undergraduate student in an institution. 422 women.	100%	The awareness of the concept of PCC was low at 47%. The general practice of PCC was also low at 31%. Marital status and religion were associated with good PCC practice.

Ayalew et al. 2017	Ethiopia	To assess women's knowledge and associated factors of preconception care in Adet Town, Gojjam, North-western Ethiopia.	A quantitative community-based cross-sectional survey.	Women of reproductive age in a community. 422 women.	100%	The awareness of the PCC concept and overall general knowledge was low at 31.8% and 27.5%, respectively. Age, educational status, and family history planning were all associated with PCC knowledge.
Chipuriro 2016	Zimbabwe	To assess preconception care knowledge among women aged 18 to 45 years seeking reproductive health services at Bindura Municipality Clinics.	A quantitative descriptive study	Women of reproductive age in the selected clinic. 120 women.	80%	The awareness of the concept of PCC was high, while the overall knowledge was low at 39%.
Dafa and Khougali 2019	Sudan	Not specified	Quantitative study	Pregnant women of reproductive age with diabetes in the selected hospital. 119 women.	65%	The knowledge of PCC among women was low. Fifty (50%) of the patients were unaware of the importance of preconception counselling among women with diabetes.
Demisse et al. 2019	Ethiopia	To assess the utilization of preconception care and associated factors among reproductive age group women in Debre Birhan Town, North Shewa, Ethiopia.	A mixed-method study, comprising of a community-based cross-sectional survey and in-depth interview.	Previously pregnant women of reproductive age in the selected town and healthcare professionals rendering maternal healthcare services in the selected institution.	100%	The PCC knowledge and utilization were low at 17.3% and 13.4%. Age, marital status, knowledge, and presence of PCC unit are associated with utilization.

				424 women and eight healthcare professionals.		
Dlamini et al. 2019	Swaziland	To explore knowledge, attitudes, and practices towards preconception care in Hhohho, Eswatini.	A quantitative cross-sectional survey.	Pregnant women in the selected clinic. 100 women.	80%	Preconception care knowledge and practice were 'fair' at 52.5% and 59%, respectively. The study also identified lack of knowledge as the main reason for not seeking PCC services.
Ekem et al. 2018	Nigeria	To assess the level of awareness and utilisation of PCC services among pregnant women.	A quantitative institution-based cross-sectional survey.	Consecutive pregnant women attending ANC in the selected hospital. 450 women.	100%	The PCC awareness and utilization were low PCC at 44.2% and 10.3%, respectively. High levels of education, residence, and delivery were all associated with increased knowledge.
Fekene et al. 2020	Ethiopia	To identify the level of women's knowledge, uptake of PCC, and associated factors.	A quantitative community-based cross-sectional survey.	Reproductive age women in the selected community. 669 women.	100%	The PCC knowledge and uptake were low at 26.8% and 14.5%, respectively. History of giving birth in an institution, using postnatal care service, utilizing a modern contraceptive method, having a higher level of education, and having permanent employment shows significant associations with good knowledge of PCC. While Household income, being knowledgeable about PCC, and history of using postnatal

						care are associated with PCC utilization.
Gezahegn 2016	Ethiopia	To identify PCC knowledge and experience and its associated factors among pregnant mothers attending antenatal care in public health centres of the West Shoa zone.	A quantitative institution-based cross-sectional survey.	Pregnant women attending ANC in public health centres in the selected region. 634 women.	100%	About 64.4% of the respondents had good PCC knowledge, while only 38.2% had experienced PCC screening. A higher level of education was associated with increased knowledge of PCC.
Goshu et al. 2018	Ethiopia	To assess utilization of preconception care and its associated factors among pregnant women in Adet, North-western Ethiopia.	A Quantitative community-based cross-sectional survey.	Pregnant women from the selected community. 229 women.	100%	Preconception care utilization was low at 9.6%. Level of education, pregnancy intention, age, and parity were associated with PCC utilization.
Goshu et al. 2018	Ethiopia	To assess women's awareness of preconception Folic acid supplementation and its associated factors in Adet, North-western Ethiopia.	A quantitative community-based cross-sectional survey	Women of reproductive age in the selected community. 422 women.	100%	Women's awareness of preconception Folic acid supplementation was low at 18.7%. Educational status, monthly family income, chronic condition, and family planning history are associated with preconceptional folic acid supplementation awareness.
Ibebuike et al. 2018	Nigeria	To describe the perception and the level of practices regarding preconception care, which will help estimate women of	A quantitative descriptive study.	Pregnant women who were attending ANC in the selected institution. 146 women.	80%	The knowledge and utilization of PCC were 57% and 41.6%, respectively.

		reproductive age's preconception care needs.				
Joyce 2018	Kenya	To assess the utilization of preconception care services among women of reproductive age in Ruiru sub-county in Kiambu County.	A mixed-method study comprising of a descriptive cross-sectional survey and Focus group discussion	Previously pregnant reproductive-age women from the selected community. Three focus group discussions consisted of 4-6 women and 384 women.	80%	The utilization of PCC components was low as only 19.8% have used folic acid supplements.
Joyce et al. 2018	Kenya	To determine the knowledge on preconception care among women of reproductive age in Ruiru Sub-County, Kiambu County.	A quantitative community-based cross-sectional survey.	Previously pregnant reproductive-age women from the selected community. 384 women.	100%	Only 38.3% have heard about PCC, and the knowledge of PCC components was also low.
Kadango 2017	Malawi	To explore and describe the knowledge men and women of childbearing age have on Healthy Timing and Spacing of Pregnancy and PCC, identify variables that influence men and women to acquire appropriate knowledge on PCC and develop strategies that could assist the	A quantitative descriptive correlational study.	Men and women of childbearing age from the selected institution who are planning to conceive. 300 men and women.	100%	The PCC awareness and utilization were low, with awareness at 41.3% There was an association between tribe, religion, health care centre, education, occupation, with PCC knowledge. Level of education was associated with the use of family planning

		provision of PCC in developing countries.				
Kassa and Yohannes 2018	Ethiopia	To assess the knowledge of preconception care and associated factors in postnatal women at public health institutions in Hawassa city, South Ethiopia.	A quantitative institution-based cross-sectional survey	Postnatal women at the public health institution. 580 women.	100%	Preconception care knowledge was low at 20% among women. Knowledge was associated with educational level, antenatal contact, and those residing in the urban area.
Kassa et al. 2019	Ethiopia	To measure PCC knowledge and attitude and their determinants among women delivered at government hospitals in a rural setting in southern Ethiopia.	A quantitative hospital-based cross-sectional survey.	Postnatal women in the selected hospital. 370 women.	100%	The knowledge level of PCC among women was 53%. Using a radio or phone significantly increases knowledge.
Kassie 2018	Ethiopia	To assess the knowledge and experience of PCC and associated factors among pregnant women with pre-existing diabetes mellitus attending diabetic clinics at selected governmental hospitals in Addis Ababa.	A mixed-method study, comprising of a hospital-based cross-sectional survey and an individual in-depth interview.	Pregnant women with pre-existing diabetes mellitus from the selected diabetic clinic. 142 for quantitative and eight mothers for qualitative study.	80%	The PCC knowledge level was at 47.2%. Level of education, occupation, and duration of diabetic follow-up were factors associated with PCC knowledge.
Lawal and Adeleye 2014	Nigeria	To assess folic acid intake determinants during preconception and early	A quantitative hospital-based cross-sectional survey.	Mothers who were attending immunization clinics at two selected hospitals.	100%	There was a low PCC folic acid knowledge level at 2.5%. Periconceptional use of folic acid was more likely among professionals,

		pregnancy by mothers in Ibadan, Nigeria.		602 mothers.		those with high education levels, and those booked early for antenatal care.
Mutale et al. 2017	Zambia	To examine the knowledge and preconception care-seeking practices of diabetic women of the reproductive age.	A quantitative hospital-based cross-sectional survey.	Women of reproductive age with diabetes and pregnant women with gestational diabetes. 114 diabetic women.	90%	Preconception care knowledge was at 47.4% and utilization at 33.3%. The level of education and duration of diabetic diagnosis were associated with PCC knowledge. The major reason for not seeking PCC was their unawareness of the need for PCC.
Olowokere et al. 2015	Nigeria	To determine the level of awareness and knowledge of preconception care, describe the practice of preconception care among women, and identify factors responsible for not seeking preconception care.	A quantitative institutional-based cross-sectional survey.	Women at eleven primary health care facilities. 375 women.	90%	Preconception care awareness and utilization were 63.5% and 34.1%, respectively. Education level was associated with good PCC knowledge. Lack of knowledge of the importance of PCC, lack of access to the service, and cost implications were identified as the factors responsible for not seeking PCC.
Oranu et al. 2015	Nigeria	To assess PCC's knowledge and attitudes among women attending antenatal clinics at the University of Port-Harcourt Teaching Hospital.	A quantitative hospital-based cross-sectional survey.	Pregnant women who were attending the ANC clinic. 194 women.	70%	The PCC awareness level was 35.5%. The level of education and parity was associated with good PCC knowledge.
Siraha et al. 2020	Zimbabwe	To assess the Perceptions of Preconception Care among Pregnant Women	Qualitative individual in-depth interviews.	Pregnant reproductive age women attending ANC clinic.	100%	The knowledge of PCC was low, although women acknowledge the importance of PCC. Some barriers to

		at Masvingo General Hospital, Zimbabwe.		Eight women.		PCC utilization, such as cost implications lack of support, were also identified.
Ugwu 2016	Nigeria	To assess the level of awareness and acceptability of pre-marital genetic counselling and screening for sickle cell haemoglobin among undergraduate students of Ebonyi State University Abakaliki, South-eastern Nigeria.	A quantitative descriptive cross-sectional study.	Male and female students from the four faculties of the selected institution. 329 students.	100%	Almost all participants, 91.2%, were aware of pre-marital genetic counselling and screening for sickle cell haemoglobin. School lectures were the major source of PCC information.
Umar 2019	Nigeria	To assess awareness and perception of preconception care among reproductive-age women.	A quantitative hospital-based cross-sectional study.	Reproductive age women from ANC clinic. 131 women.	90%	Preconception care awareness level was 20.6%. Tribe and employment status were associated with PCC knowledge.
Wanyonyi and Victor 2017	Kenya	To assess women's knowledge on various preconception health care topics.	A quantitative descriptive cross-sectional study.	Reproductive age women who were attending reproductive health services at the selected hospital. 384 women.	90%	About 51% have heard about folic acid, while 72.4% were unaware of its right timing and importance. The knowledge about the risk factors, screening, and various components of PCC was also low.
Wanyonyi and Abwalaba 2019	Kenya	To assess the level of awareness and beliefs on the concept of preconception health care	A quantitative descriptive cross-sectional study.	Reproductive age women attending reproductive health	90%	Very few (20.2%) have ever been informed of PCC. Only 8.1% have ever sought PCC. The main reason for

		among women attending Maternal and Child Health & family planning services at Moi Teaching and Referral Hospital.		services at the selected hospital. 384 women.		not seeking PCC was a lack of awareness.
Preconception care knowledge and provision among healthcare workers						
Akanbi and Oluwatosin 2019	Nigeria	To evaluate nurses' knowledge of preconception care interventions.	A quantitative descriptive cross-sectional survey	Registered nurses from three healthcare facilities. 187 nurses	100%	Preconception care knowledge among nurses was good at 65.8%
Bekele et al. 2020	Ethiopia	To assess preconception care knowledge and associated factors among healthcare providers working in public health institutions in Awi zone, North West Ethiopia.	A quantitative, an institutional-based **c**ross-sectional survey	Healthcare workers in a public health institution. 600 health care providers.	100%	Knowledge of PCC was 52%. Working at a hospital, using smartphones to access PCC resources, availability of PCC guidelines, undergoing training on PCC education and counselling, receiving HIV testing and management training, and partaking in community PCC awareness campaigns were associated with knowledge.
Biratu 2017	Ethiopia	To develop a guideline to assist PCC incorporation in the Ethiopian health system, thereby reducing the high incidence of advanced pregnancy outcomes in the country.	A quantitative descriptive institutional-based cross-sectional survey.	Healthcare workers in nine public health centres in the selected city. 516 health care providers.	100%	The knowledge and provision of PCC among HCWs was low at 41.4% and 15.3%, respectively. The study also identified predictors of good knowledge and practice.

Kassa et al. 2019	Ethiopia	To determine the level of HCW's PCC practice and factors associated with the non-implementation of PCC.	A quantitative institution-based cross-sectional survey.	Healthcare providers from the selected public health institution. 634 health care workers.	100%	Preconception care practice was deficient at 15.3%, and most PCC components were not practiced. Not practicing PCC was higher in those that did not screen clients' RPL, HCWs with poor PCC knowledge, among nurses, and those that believe that PCC is for a specific group of HCPs.
Kassa et al. 2018	Ethiopia	To determine healthcare providers' knowledge level about PCC and identify predictors of sufficient knowledge.	A quantitative institution-based cross-sectional survey	Healthcare providers from the selected public health institution. 634 health care workers.	100%	Only 31% HCWs have good knowledge about PCC. Knowledge levels were high among HCWs working in Hospitals, using a smartphone to access clinical resources, those who have read PCC guidelines from other organizations from other countries, those who practice PCC, and those who earn a substantial salary.
Seman et al. 2019	Ethiopia	To assess the knowledge, attitude, and practice of physicians in Tikur Anbesa hospital about preconception care.	A quantitative descriptive cross-sectional survey.	Internal medicine and obstetrics and gynaecology residents in the selected teaching hospital. 156 doctors.	90%	Preconception care knowledge level was good and low among the two groups at 69.2% and 26.9%, respectively. At the same time, the practice was low at 19.2% and 42.3%, respectively.
Tokunbo et al. 2016	Nigeria	To assess the level of awareness, perception, and practice of PCC among	A quantitative descriptive cross-sectional study.	Doctors and nurses who were working in a	90%	Preconception care awareness was high, 83.3% have heard of PCC, but only 23% had good knowledge of the

		health workers and to provide a recommendation for a framework for its implementation in Ahmadu Bello University Teaching Hospital.		selected tertiary institution. 280 doctors and nurses.		PCC component. Years of experience among doctors and nurses were associated with PCC knowledge. Only 47.7% had ever offered PCC, and folic acid supplementation was the most common intervention provided.
Ukoha and Dube 2019	South Africa	To describe the Primary Health Care nursing student's knowledge of and attitude towards the provision of PCC.	A quantitative descriptive cross-sectional study.	Primary health care post-basic nursing students. 163 PHC nurses.	100%	Fifty-five percent of the population had good knowledge of PCC. Factors associated with knowledge include age, employment areas, and study centres (urban versus rural).

Table 2-A1: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Page 1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Page 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Page 4
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Page 5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	Page 5
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Page 6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Page 6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Page 6
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Page 6 and 7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Page 8
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Page 8
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	Page 8
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Page 8 - 9
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Page 7
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Page 9 - 20
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Page 14 - 20
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Page 14 - 20
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Page 9 - 13
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Page 21 - 24

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Limitations	20	Discuss the limitations of the scoping review process.	Page 25
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Page 26
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	Page 27

JBI, Joanna Briggs Institute; PRISMA-ScR, Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

*, Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

†, A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote); ‡, The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting; § The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Source: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. https://doi.org/10.7326/M18-0850