World Forum on Obstetrics and Gynecology.

Development and Validation of the **5 C** Instrument for Contraceptive Counseling

Sara Palma,Diogo Ayres-de-Campos, Mónica Antunes,**Ricardo São João**[1,2,3,4], Maria Presado.
ricardo.sjoao@esg.ipsantarem.pt
1.Centre of Statistics and its Applications (CEAUL), University of Lisbon
2.Nursing Research, Innovation and Development Center of Lisbon (CIDNUR)
3.Center for Global Studies, Aberta University, Lisbon
4.Polytechnic Institute of Santarém, Santarém

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Sexual and Reproductive Health

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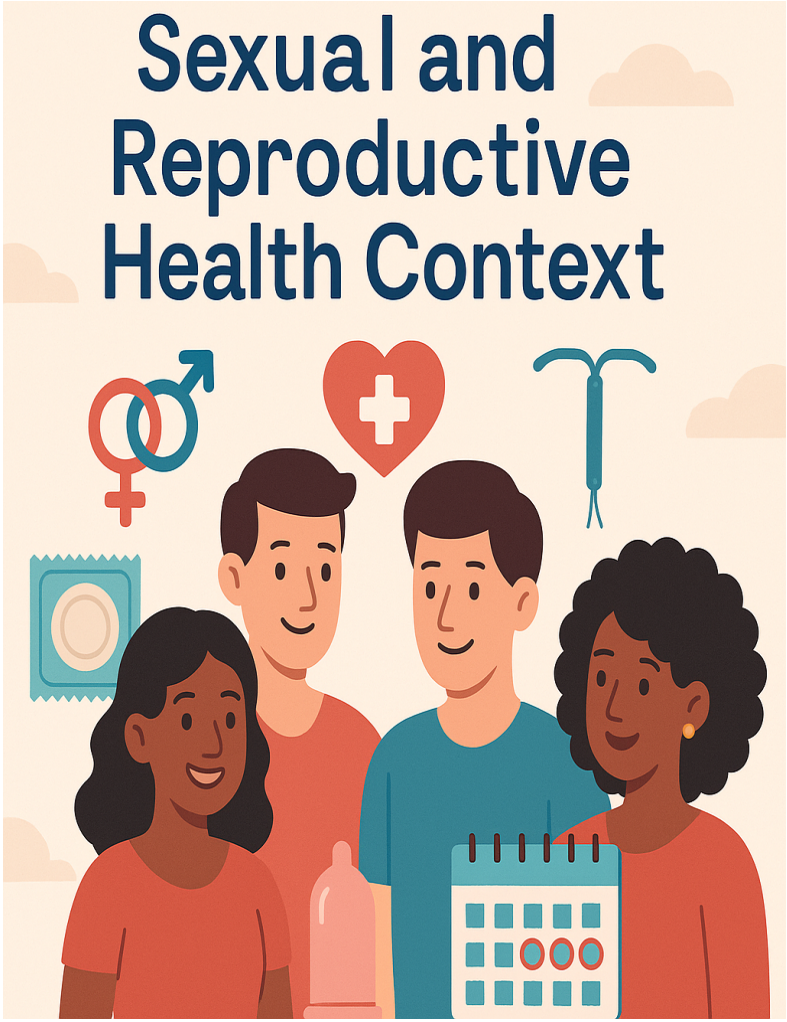

source:OpenAI. (2025). Sexual and Reproductive Health context [AI-generated image]. ChatGPT (GPT-5 model). https://chat.openai.com/

Sexual & Reproductive health entails physical, emotional, mental and social well-being and includes access to family planning and contraception.

Clinical problem identification

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★ **Contraceptive illiteracy** → **non-adherence, discontinuation, dissatisfaction.**

source:https://www.pregnancybirthbaby.org.au/

Clinical problem identification

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★The **user-dependent methods** (e.g., Combined Oral Contraceptives - COCs) are **prone to failure**;

source:https://www.fertilityfamily.co.uk/

★ Recently, 84% of women report **forgetting pills** and 47% intend to **switch to non-daily methods** (Palma et al., 2024).

Clinical problem identification. Termination Of Pregnancy (TOP)

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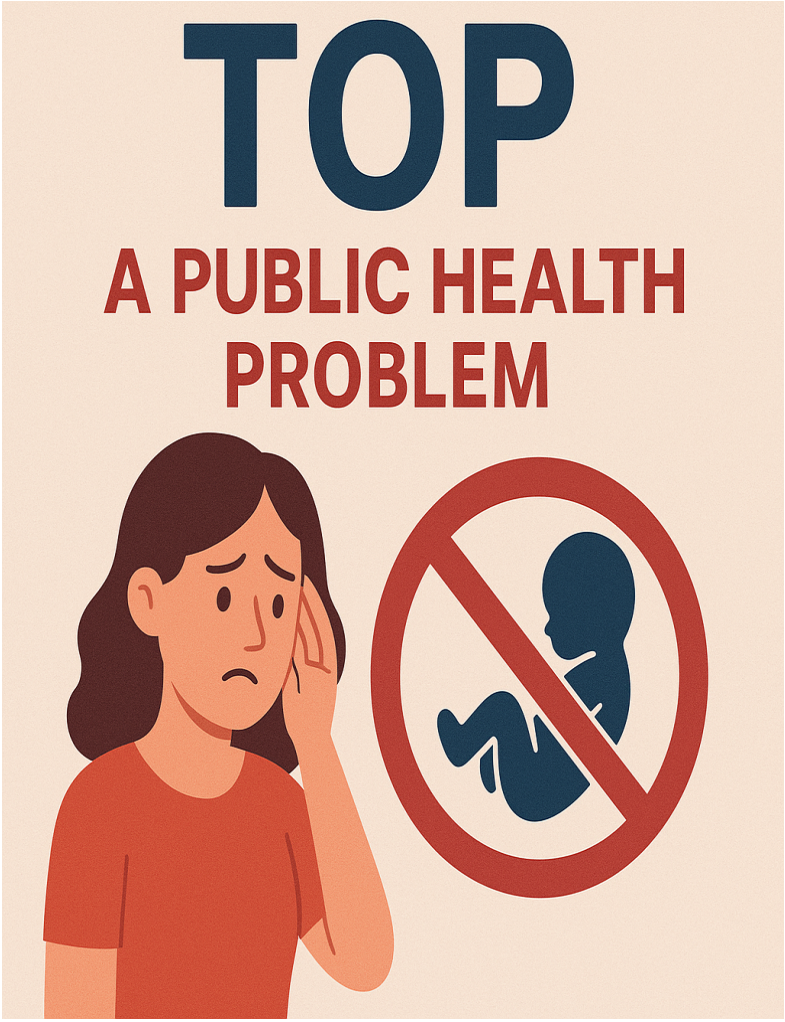
- TOP is considered a public health problem with psicological, economic and social implications (Presado, Palma, & Cardoso, 2018)
- It is imperative to develop effective forms of contraceptive counseling.



source:OpenAI. (2025). TOP - A public health problem [AI-generated image]. ChatGPT (GPT-5 model). https://chat.openai.com/

Clinical problem identification (cont.)

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★ Palma et al. (2023) in an observational and retrospective study involving 1287 women, reported that a significant number used either oral contraceptives or no contraceptive method at all;

★ **Post-TOP** :

- 93% opt to use contraception;
- 98% of repeat TOP were already using a method.

(Palma et al., 2023;Relatório de Análise dos Registos das interrupções da Gravidez, 2022;Direção-Geral da Saúde, 2018)

TOP in Portugal: 25 years of change

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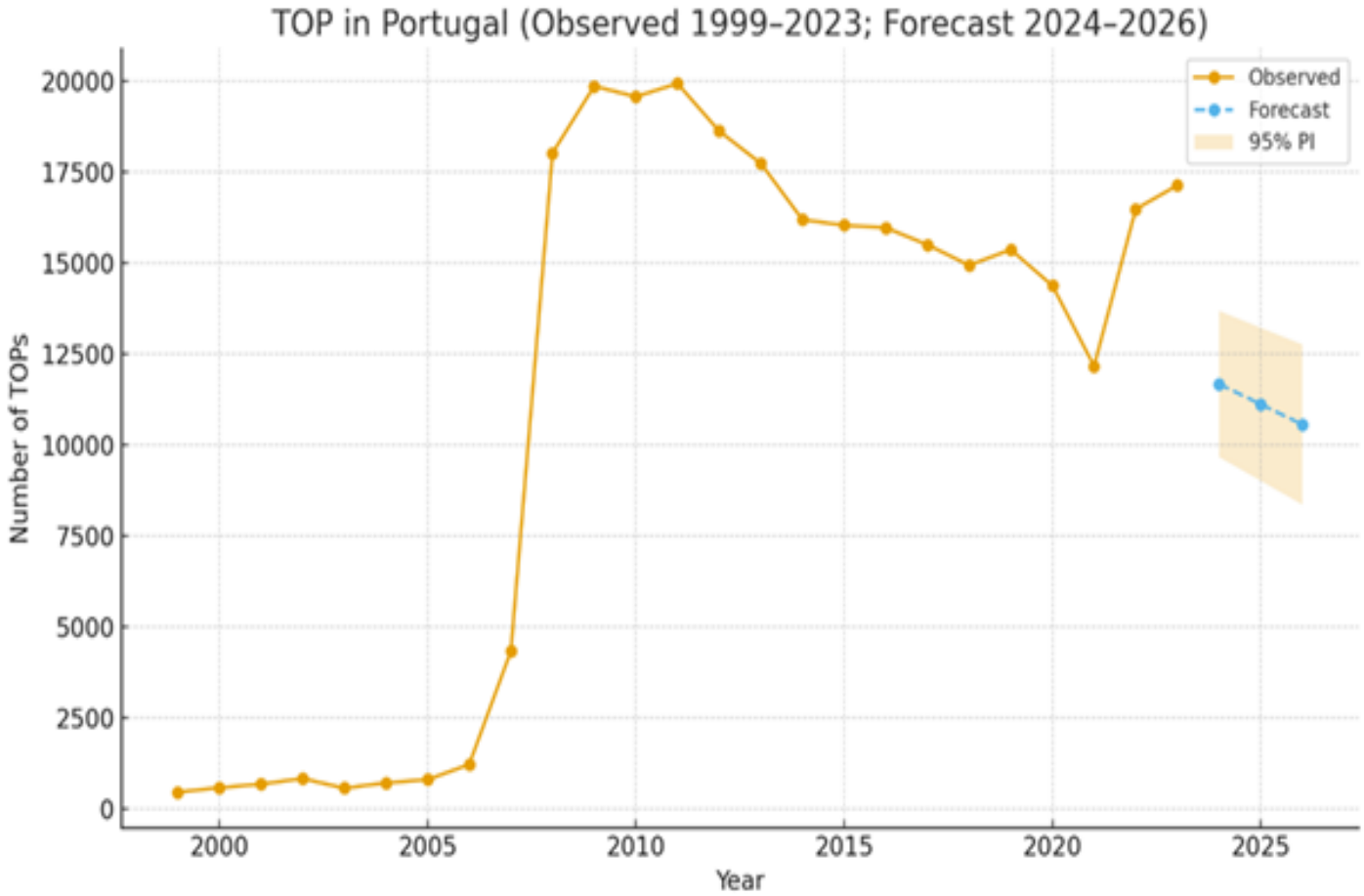

1999-2006: TOP is legally prohibited [low numbers: 454(min); 1215 (max)].
2007-2008: Major increase due to TOP legalization.

TOP in Portugal: 25 years of change (cont.)

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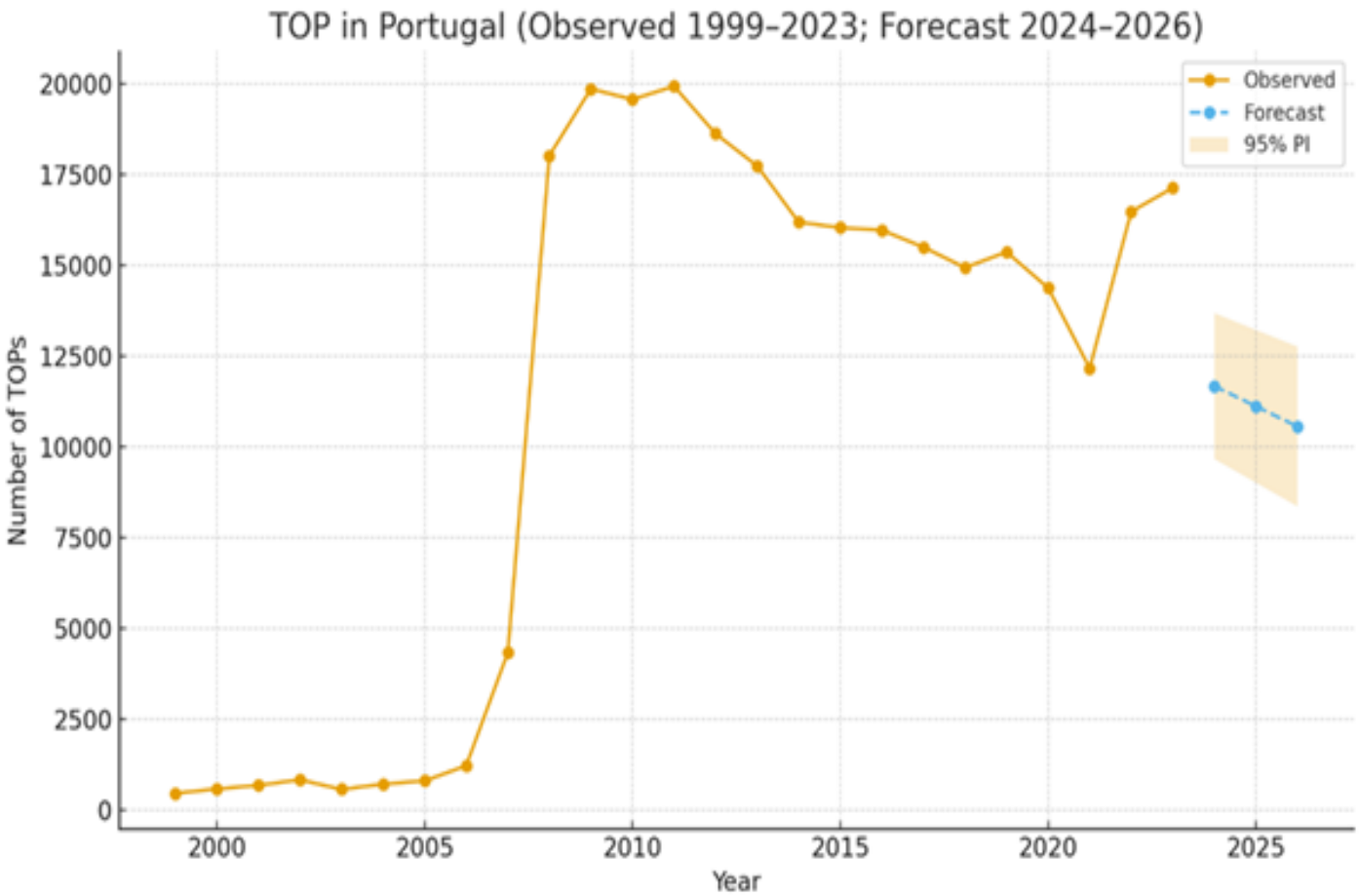

2009-2016: Stabilization ≈ 16k-20k per year.
2017-2019: Slight downward trend;
2020-2021: Noticeable ↓ decrease due to the impact of COVID-19.

TOP in Portugal: 25 years of change (cont.)

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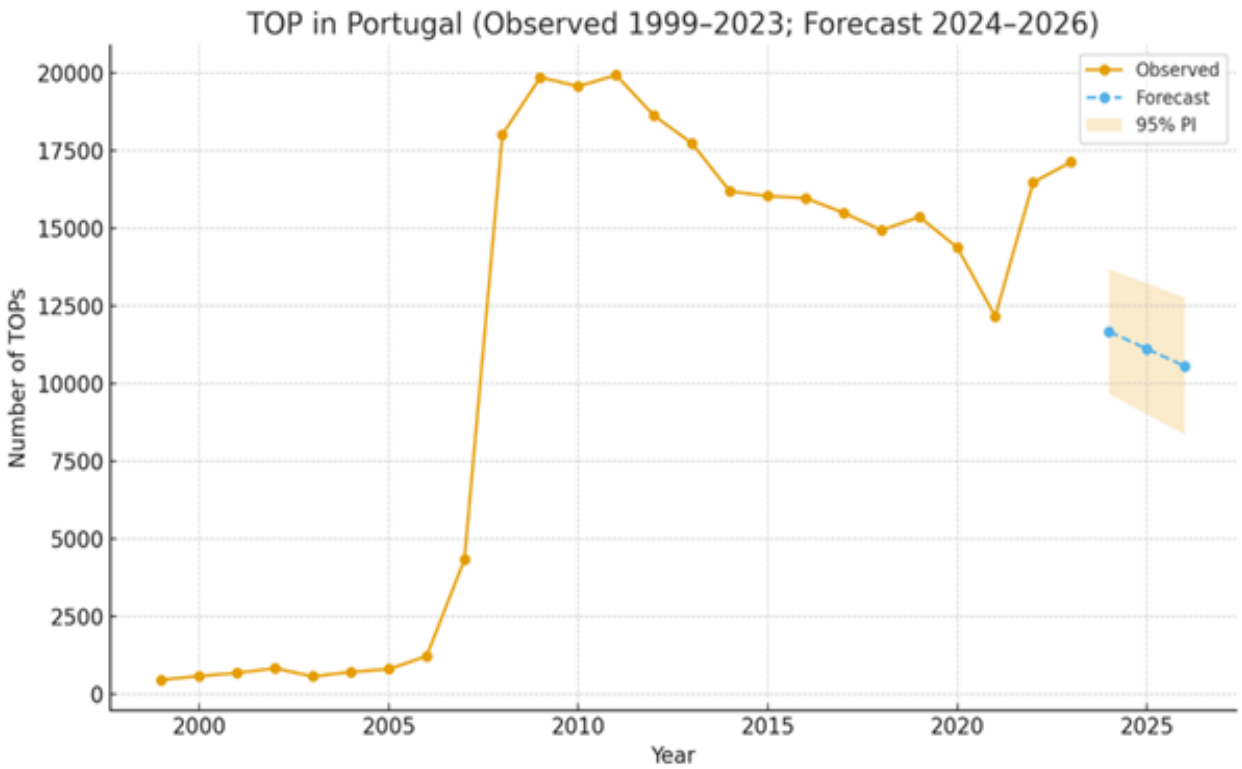
2022-2023: Increase due to healthcare accessibility.



The forecast model suggests a gradual decrease towards ≈ 10k - 12k TOPs between 2024 and 2026.

Constraints and Policies

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Constraints ("felt in the field")

- few profissionals (e.g nurse-midwives);
- contraceptive illiteracy.

Policies (more on paper than in practice !)

- expanded access to modern contraceptives;
- equity and quality in services;
- protection of vulnerable groups;
- right to information.

Aim of the study

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Construct and validate a practical instrument that:

❶ **promote** shared decision-making;
❷ **combat** contraceptive illiteracy;
❸ **guide** healthcare professionals in providing quality contraceptive counselling;
❹ **improve** adherence to and satisfaction with the contraceptive method;
❺ **empower** women to make autonomous and informed choices

Study design

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- Methodological study (April-June 2021) with **Delphi method**.

- Two iterative rounds to achieve consensus and stability.

Methodology

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Delphi Method

In simple terms, it is a structured and iterative process to reach expert consensus on a specific topic.

We used it to construct and validate the **items** of the **5 C Contraceptive Counseling** instrument to be applied in a contraception session.

The "5 Cs"

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The "5 Cs" of Contraceptive Counseling:

1C: **Building a Relationship of Trust**

The "5 Cs"

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The "5 Cs" of Contraceptive Counseling:

1C: Building a Relationship of Trust
2C: Understanding Knowledge and Beliefs

The "5 Cs"

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The "5 Cs" of Contraceptive Counseling:

1C: Building a Relationship of Trust
2C: Understanding Knowledge and Beliefs
3C: Empowering for Effective Contraception

The "5 Cs"

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The "5 Cs" of Contraceptive Counseling:

1C: Building a Relationship of Trust
2C: Understanding Knowledge and Beliefs
3C: Empowering for Effective Contraception
4C: Implementing Contraceptive Measures

The "5 Cs"

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The "5 Cs" of Contraceptive Counseling:

1C: Building a Relationship of Trust
2C: Understanding Knowledge and Beliefs
3C: Empowering for Effective Contraception
4C: Implementing Contraceptive Measures
5C: Continuing Surveillance and Monitoring

How Delphi was applied here?

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1.Panel

Inclusion & rationale

Professionals with experience in contraceptive counseling (nurse-midwives, lecturers in maternal/obstetric health, ...).

The panel will assess 35 items of **5 C Contraceptive Counseling** using a Likert scale  .

(1:Totally Disagree; 2:Disagree; 3:Neither Agree Nor Disagree; 4:Agree; 5:Totally Agree)

Metrics used: CVI

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Content Validity Index (CVI)

✿ The CVI measures how relevant or clear the items of an instrument are, according to expert ratings.

CVI= $\frac{A}{N}$, where:

- A: number of experts rating the item as relevant (rated `4:Agree or 5:Totally Agree`)
- N: total number of experts on the round.

A **CVI** $\geq$ **0.80**, 80% agreement, was established for each item , as it corresponds to **very good content validity** (Lynn, 1986; Polit & Beck, 2006)

Metrics used: CVR

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Content Validity Ratio (CVR)

A statistic proposed by Lawshe (1975) to quantify expert agreement on **how essential** each item is for a construct.

CVR= $\frac{n_e - \frac{N}{2}}{\frac{N}{2}}$, where:

- n_e number of experts who rated the item as essential
- N total number of experts

Metrics: CVR

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✿ CVR ranges from -1 to 1.

CVR=1➡ all experts consider the item essential
CVR=0➡ half of the experts consider it essential
CVR=-1➡ all experts consider the item non-essential

Decision rule

- CVR $\geq$ critical value ➡ item is retained.
- CVR $<$ critical value ➡ item should be revised or eliminated.

PS: According to Ayre & Scally (2014), the critical value depends on N.

Hands-on session

Round 1 (28 Apr-18 May 2021)

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35 invited experts; 23 attended ($\frac{23}{35}$ =66%)

35 items

Content validity for items of the 5 C Contraceptive Counselling instrument (N = 23 experts)

Item	N	N_e	CVR	A	CVI	CVR $\geq$0.391	CVI $\geq$ 0.80
Item 1	23	19	0.652 $\left(\frac{19-\frac{23}{2}}{\frac{23}{2}}\right)$	21	0.913 $\left(\frac{21}{23}\right)$	Yes	Yes ✓
Item 2	23	17	0.478	19	0.826	Yes	Yes ✓
...	...	...	...	...	...	...	...
Item 25	23	15	0.304	22	0.957	No	Yes ✍
...	...	...	...	...	...	...	...

Conclusion: Retain all items and revise item 25.
Overall concordance: 96%.
N=23; Critical CVR:0.391 (Ayre & Scally, 2014)

After revise item 25: The annual assessment should be conducted in person in cases of associated pathology or after identifying dissatisfaction during teleconsultation.

Hands-on session

Round 2 (30 May- 4 Jun 2021)

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23 invited experts **from Round 1**; 18 attended ($\frac{18}{23}$ =78%)

35 items

Content validity for items of the 5 C Contraceptive Counselling instrument (N = 23 experts)

Item	N	N_e	CVR	A	CVI	CVR $\geq$ 0.444?	CVI $\geq$ 0.80?
Item 1	23	19	0.652	21	0.913	Yes	Yes ✓
Item 2	23	17	0.478	19	0.826	Yes	Yes ✓
...	...	...	...	...	...	...	...
Item 25	23	19	0.652	22	0.957	Yes	Yes ✓
...	...	...	...	...	...	...	...
Item 30	23	12	0.043	15	0.652	No	No ✗
...	...	...	...	...	...	...	...

Conclusion: Retain all items except item 30.This item was replaced by another.
Overall concordance: 97%.
N=18; Critical CVR:0.444 (Ayre & Scally, 2014)

Characterization of expert panel participants

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- N°of experts: 23
- Average age: 49 years
- Years of Professional experience in the field:12.5 years
- Sex: Female
- Academic Qualifications: Master (47.8%);Nurse-midwife (34.8%); PhD (17.4%)
- Profissional activity: Nurse-midwifes (78%); University lectures (22%).

Results

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"5 C Contraceptive Counseling" instrument (2024)[1]

source: https://pxhere.com

[1] Palma, S., Ayres-de-Campos, D., Antunes, M., São-João, R., & Presado, M. H. (2024). Contraceptive counseling: Construction and validation of instrument-"5C contraceptive counseling". Healthcare, 12(10), 1088. https://doi.org/10.3390/healthcare12111088

5Cs

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1C: Building a Relationship of Trust

Item	Name
1	Create an atmosphere of closeness.
2	Be a good listener.
3	Consider non-verbal aspects of communication.
4	Encourage the individual to express their feelings, doubts, and fears without judgment.
5	Understand the maternity plan.
6	Use language suitable to the individual.
7	Organize the physical space of the location to avoid communication barriers.

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2C: Understanding Knowledge and Beliefs

Item	Name
1	Understand previous contraceptive experiences.
2	Identify previously used contraceptives.
3	Assess previous contraceptive method adherence.
4	Evaluate contraceptive knowledge.
5	Identify preferences regarding contraception.
6	Assess suitability of contraception to lifestyle.
7	Inquire about concerns regarding contraceptive use.
8	Evaluate beliefs and myths regarding contraceptive use.
9	Assess motivation for contraceptive use.
10	Encourage discussion on the benefits of contraceptive use.
11	Inquire about perceived risks of non-contraceptive use.
12	Understand factors that may affect continuation of the selected method.

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3C: Empowering for Effective Contraception

Item	Name
1	Clarify myths and beliefs.
2	Meet their expectations and needs.
3	Inform about all contraceptive options available in PT-use . . .
4	Explain the mode of action, effectiveness, duration, how to use, and possible . . .
5	Assess the risks and benefits of contraceptive use.
6	Validate what has been learned.
7	Encourage informed decision-making by the woman.
8	Provide supportive information materialsâbrochures and websites.
9	Allow time for decision-making.

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4C: Implementing Contraceptive Measures

Item	Name
1	Assist in selecting the appropriate method.
2	Ask the woman to identify barriers or obstacles that may compromise . . .
3	Instruct on monitoring signs and symptoms that may lead to method discontinuation.
4	Demonstrate availability through support networks for additional . . .
5	Ensure the womanâs accountability in informed method selection.

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5C: Continuing Surveillance and Monitoring

Item	Name
1	Schedule follow-up after method selection through scheduling of in-person consultation.
2	Schedule follow-up after method selection through scheduling of teleconsultation.
3	Evaluate satisfaction and adherence to the selected method after 3 months.
4	Evaluate satisfaction and adherence to the selected method after 6 months.
5	Evaluate satisfaction and adherence to the selected method annually-in-person, . . .
6	Provide the option to change the contraceptive method, according to need.
7	Promote screenings (cervical cancer, breast cancer, and sexually transmitted infections).

Limitations

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The Delphi method is not a panacea, as it has inherent limitations such as:

- Expert selection and dropout may bias results;
- Quality depends on feedback and independence of responses;
- Time-consuming;
- Experts of only one gender.

Conclusions & clinical implications

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- 5 C guide achieved strong content validity and consensus;
- Structured, person-centred counseling improves informed choice and adherence.
- The professionals' training level and the time allocated to counseling influence outcomes.

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Thank you for your PPA!

Presence, Participation and Attention.

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