Research Material

Calculating contraceptive prevalence and unmet need for family planning in low-fertility countries with the Generations and Gender Survey

Judith C. Koops

Contents

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Abstract

BACKGROUND
In Europe, 10%–40% of adults experience an unintended or sooner-than-intended birth. However, European research on family planning need and use is scarce.

OBJECTIVE
The Generations and Gender Survey is a cross-national panel survey collected in low-fertility settings in Europe, Asia, and South America. This paper demonstrates how to use this dataset to calculate family planning need and use and explores the possibility of comparison across countries and time.

METHOD
The paper provides a hands-on example of how to calculate contraceptive prevalence and unmet need for family planning using Generations and Gender Survey data collected in the Republic of Moldova in 2020. It also provides an overview of the differences between the questionnaires of the Generations and Gender Survey round II (collected in the 2020s), the Generations and Gender Survey round I (collected in the 2000s), the Fertility and Family Survey (collected in the 1990s), the World Fertility Survey (collected in the 1970s and 1980s), and the Demographic and Health Surveys (collected in the 1990s–2020s).

CONCLUSION
The Generations and Gender Survey is one of the few data sources that allows examining family planning need and use in European countries. The high comparability between the Generations and Gender Survey and other international demographic surveys provides ample opportunities to examine how family planning need and use varies across and within countries over time. The panel aspect of the Generations and Gender Survey can be used to expand knowledge about family planning need and use and their consequences.

CONTRIBUTION
Calculating contraceptive prevalence and unmet need for family planning can be difficult

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and time-consuming. By reducing this burden, this paper aims to stimulate family planning research in low-fertility settings and increase comparisons across countries and time.

1. Introduction

Most people would like to become a parent at some point in their lives. However, having a child or another child has important implications. This is particularly true for unplanned and mistimed pregnancies. Compared to planned pregnancies, unplanned and mistimed pregnancies can cause distress, strain relationships, and are associated with worse health and development of children (Baydar 1995; Carson et al. 2013; Crissey 2005; Flower et al. 2013; Grussu, Quatraro, and Nasta 2005; Lichter et al. 2016). A straightforward way to avoid unplanned pregnancies is the use of contraceptives. For this reason, access to family planning is considered to be fundamental to determining the course of one's life and is recognized as a human right by the World Health Organization.

Unmet need for family planning is the proportion of women who want to stop or delay childbearing but are not using any method of contraception. Together with contraceptive prevalence – the proportion of women who are using a form of contraception – estimating unmet need is central to monitoring the progress of family planning need and use (Alkema et al. 2013; Cleland, Harbison, and Shah 2014). Most research on unmet need for family planning and contraceptive prevalence is conducted in high fertility settings in Africa, South America, and Asia (Senderowicz and Maloney 2022). This is for a good reason, as access to contraceptives is not yet guaranteed in all countries in the Global South. Nevertheless, even in countries with high access to modern contraceptives, unplanned pregnancies can be common. In Europe, the proportion of unplanned pregnancies is estimated to be between 10% and 40% (Backhausen et al. 2014; Brzozowska, Buber-Ennser, and Riederer 2021; Flower et al. 2013; Régnier-Loilier, Leridon, and Cahen 2007; Stern et al. 2016; Tydén et al. 2011; Wellings et al. 2013). This highlights the discrepancy between access to contraceptives and actual (consistent) use, and warrants paying continuous attention to the topic of family planning even in countries with good access to modern contraceptives, and where overall fertility levels are low.

The Generations and Gender Survey (GGS) is one of the few recent data sources that allows studying family planning need and use in low-fertility settings, and the only data source that allows doing so cross-nationally. This paper provides a hands-on example of how to calculate contraceptive prevalence and unmet need for family planning using GGS data collected in the Republic of Moldova in 2020. In addition, it discusses the scope for cross-national and across-time comparisons by evaluating the

overlap of the GGS with the Demographic and Health Surveys (DHS), the Fertility and Family Survey (FFS), and the World Fertility Survey (WFS). The paper concludes by discussing promising avenues for using GGS data to study family planning need and use.

2. Contraceptive prevalence and unmet need for family planning

2.1 Contraceptive prevalence

The United Nations Population Division defines contraceptive prevalence as "the percentage of women aged 15–49 who are currently using, or whose sexual partner is using, at least one method of contraception, regardless of the method used" (United Nations Department of Economic and Social Affairs Population Division 2022a).

$$CP = \frac{Women\ of\ respective\ marital\ status\ and\ age\ group\ who\ are\ currently\ using\ a\ method\ of\ contraception}{Number\ of\ women\ of\ respective\ marital\ status\ and\ age\ group} \times 100$$

In addition to overall contraceptive prevalence, it is common to distinguish between the prevalence of using any modern method and any traditional method and to calculate the prevalence of the use of each individual method.

2.2 Unmet need for family planning

Unmet need for family planning is "the proportion of women who are fecund and sexually active and want to stop or delay childbearing but are not using any method of contraception" (United Nations Department of Economic and Social Affairs Population Division 2022a). In addition, the numerator includes pregnant women whose pregnancies were unwanted or mistimed at conception and postpartum amenorrheic women who are not using contraception and whose pregnancies were unwanted or mistimed at the time of conception.

$$UFP = \frac{Women\ of\ respective\ marital\ status\ and\ age\ group\ who\ have\ an\ unmet\ need\ for\ family\ planning}{Number\ of\ women\ of\ respective\ marital\ status\ and\ age\ group} \times 100$$

Calculating unmet need for family planning involves combining information on fertility intentions, contraceptive use, and fecundity (Bradley et al. 2012). This makes unmet need for family planning complicated to calculate. Figure 1 provides a schematic overview of the groups of women that should be distinguished in order to calculate unmet need (Bradley et al. 2012). The numerator combines the number of women who have an

unmet need for spacing (women who would like to postpone childbearing) and those who have an unmet need for limiting (women who do not want to have any more children). The denominator includes all women except those with missing information.

Figure 1: **Definition of unmet need for family planning for women of reproductive age**
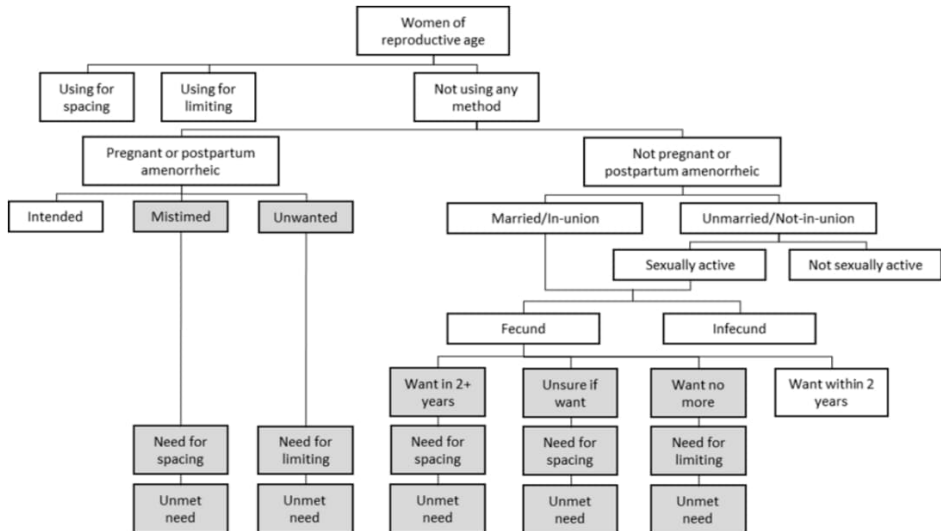
2.3 Other family planning estimates

The schema in Figure 1 can also be used to calculate other related estimates, such as demand for family planning and demand satisfied by modern methods.

Demand for Family Planning = Family planning need met + Unmet need for family planning

$$Demand\ Satisfied\ by\ Modern\ Methods = \frac{Family\ planning\ need\ met\ with\ modern\ contraceptives}{Family\ planning\ need\ met\ +\ Unmet\ need\ for\ family\ planning}$$

3. The Generations and Gender Survey

3.1 Data

GGS is a cross-national panel survey of families, life course trajectories, and gender relations (Gauthier, Cabaço, and Emery 2018; Vikat et al. 2007). The first round of data collection (GGS-I) was conducted in 21 countries between 2003 and 2013 (Gauthier, Cabaço, and Emery 2018). Fifteen countries conducted a second wave 3 years after the first interview, and 5 countries a third wave 6 years after the first interview (Gauthier, Cabaço, and Emery 2018). The second round of data collection (GGS-II) began in 2020. Thus far information on 10 countries is available, but this number will increase in the coming months and years. GGS-I and GGS-II data can be accessed via the website of the Generations and Gender Programme. For details see Appendix A.

In preparation for the second round of data collection, the fertility and fecundity section of the questionnaire was further aligned with the DHS (Gauthier et al. 2021). The list of response options to questions about contraceptive methods and fertility intentions was extended, and questions were added to better capture fecundity (e.g. How old were you when you started menopause?), current unmet need (e.g., When your youngest child was conceived, did you yourself intend to have a/another baby?), and sexual activity (Did you have sexual intercourse in the past 4 weeks?). Information about sexual activity can be used to calculate unmet need for the group of women who are neither married nor in a cohabiting union (see Figure 1). An overview of all relevant questionnaire adjustments is shown in Appendix B.

3.2 Calculating family planning estimates with the GGS

A tutorial on how to estimate contraceptive prevalence and unmet need for family planning using GGS-II data is available in the online supplementary material. The tutorial provides an overview of the GGS-II variables needed to calculate the family planning estimates and a description of the process. Following the example of the World Contraceptive Use reports (United Nations Department of Economic and Social Affairs Population Division 2022a), in the tutorial contraceptive prevalence is further divided into modern versus traditional contraceptive use and the use of each individual contraceptive method. Unmet need for family planning is divided into unmet need for spacing, unmet need for limiting, and demand satisfied by modern contraceptives.

The tutorial uses data on 2,963 Moldovan women aged 15–49. The data were collected in the Republic of Moldova in 2020 via face-to-face interviews. The document is prepared in R Markdown, using R version 4.0.2, a free software environment for

statistical computing and graphics. Because it includes all code leading to the calculation of contraceptive prevalence and unmet need for family planning the estimates are fully reproducible, even by those with limited knowledge of R. The tutorial can be used as a template to calculate family indicators for the Republic of Moldova as well as other countries participating in the GGS-II data collection.

3.3 Differences between the GGS-II and the DHS

The tutorial follows as closely as possible the operationalization developed by the DHS programme and used by the United Nations Population Division to calculate unmet need for family planning and contraceptive prevalence. While several steps have been taken to align the GGS-II questionnaire with the DHS questionnaire, differences remain which may affect their calculation.

In regard to contraceptive prevalence:

- GGS-II allows respondents to report multiple contraceptive methods per individual, instead of only one
- GGS-II does not specifically ask about the use of sterilization for contraceptive purposes

To align the reporting of multiple contraceptive methods in the GGS-II with that of one contraceptive method in the DHS, a new variable can be prepared that reflects the most effective method used to prevent pregnancy. The tutorial in the online supplementary material combines information from the World Health Organization and the Centers for Disease Control and Prevention to create the following list of contraceptives, ordered from the most effective to the least effective (Centers for Disease Control and Prevention 2014; World Health Organization 2020):

1. Implants
2. Male sterilization
3. Female sterilization
4. IUD
5. Injectable
6. LAM
7. Pill
8. Patch
9. Vaginal ring
10. Diaphragm; Cervical cap

11. Male condom
12. Safe period method (traditional method)
13. Withdrawal (traditional method)
14. Female condom
15. Sponge
16. Persona (traditional method)
17. Foam; Cream; Jelly
18. Emergency contraception

GGS-II captures information about sterilization in combination with other operations that make it impossible to have (more) children. This potentially includes sterilization for medical reasons. Using this information without correction could somewhat overestimate the use of sterilization for contraceptive purposes. Most of the time no external data sources will be available to shed further light on the division between sterilization for contraceptive purposes and for medical purposes. In the tutorial I use information on sterility among single women and women in a union to correct for this issue. This reduces the unweighted estimate of the percentage of women using female sterilization as a contraceptive from 4.2% to 3.0%. This shows that a correction could reduce the estimate of sterilization use; however, because in most countries sterilization is fairly uncommon it will not have much affect on the overall estimate of unmet need for family planning.

The differences between the GGS-II and DHS questionnaires that could influence the estimation of unmet need for family planning are:

- GGS-II asks if women intend to have a(nother) child in the next 3 years instead of the next 2 years
- GGS-II captures infecundity differently.

Some differences between the GGS-II and the DHS are difficult to account for. This is the case regarding the reference period for short-term fertility intentions. The DHS captures the intention to have a(nother) child in the next 2 years. The GGS-II is a panel survey with a follow-up questionnaire every 3 years. For this reason, GGS-II asks if women intend to have a(nother) child in the next 3 years. As a result, women who are not using contraception and who plan to have a child in 2–3 years following the moment of interview are categorized as having their family planning need met when using GGS-II data, while they are categorized as having an unmet need for spacing when using DHS data. In other words, using GGS-II data will result in a lower estimate of unmet need for spacing, but a similar estimate of unmet need for limiting, as compared to the use of DHS data. It is not known how large this discrepancy is.

Another difference between the GGS-II and the DHS is how fecundity is captured. Similarly to the DHS, GGS-II captures whether women are menopausal, never menstruated, or are postpartum with the last birth longer than 5 years ago. However, information on whether women ever used contraception or had a hysterectomy and the time since last menstruation is not captured. Instead, GGS-II asks if women believe they are physically able to have a(nother) child and if their partner is physically able to have a(nother) child. In the tutorial, women are categorized as infecund if they responded 'Definitely not' to either of these two questions. This may lead to consistent differences between the surveys in the estimation of unmet need for family planning. However, the differences are not necessarily large. Women who have had a hysterectomy or have not had a menstrual period for a long time are likely to report not being physically able to have a child. It is possible that women tend to underestimate their own fecundity, in particular when reaching the end of their childbearing years. If this is the case, using GGS-II data results in a lower estimate of unmet need for family planning for the older age groups than DHS data.

3.4 Differences between GGS-II, GGS-I, FFS, and WFS

Europe has a long tradition of international fertility surveys, starting with the Comparative Fertility Surveys (CFS) in the 1960s in 10 European countries, Turkey, and the USA (Festy and Prioux 2002). The data collected by this project seems to have been lost over time, or at least is not currently publicly available. The CFS project was followed by the WFS in the 1970s and 1980s. The WFS was implemented in a total of 62 countries worldwide. Data collected in low- and middle-income countries situated in Africa, America, and Asia are available in the repository of the DHS program (DHS 2022). Of the data collected in the 18 European countries, information on 8 countries is archived and 7 of these are currently accessible to the research community (Koops 2020). The FFS was implemented in the 1990s in 24 countries, of which 21 are situated in Europe (UNECE 2022). FFS data on all countries except Switzerland and the Netherlands are available via the repository of the Generations and Gender Programme (GGP 2022).

Questions used to estimate contraceptive use and unmet need for family planning are remarkably similar in the WFS, FFS, GGS-I, and GGS-II. Table A-1 in Appendix C provides a comparison of the questions in the different surveys. The largest differences are found in the way fecundity, sexual activity, and short-term fertility intentions are captured. GGS-I and GGS-II contain a question about the intention to have a child in the next 3 years. FFS respondents were instead asked about the age at which they wanted to have their next child. Meanwhile, the WFS only asks about the desire for more children, but not in what period. It is therefore easy to compare contraceptive prevalence and unmet

need for limiting across the different surveys. However, comparing unmet need for spacing might proof more difficult. Fecundity is also captured differently in each survey. Questions about the menstrual cycle are only asked in GGS-II, and questions about menopause only in WFS and GGS-II. However, all the surveys capture women's own assessment of their fecundity, which can be used instead when comparing unmet need for family planning across the different surveys. Information on sexual activity was not collected in the GGS-I questionnaire. As a result, this questionnaire cannot be used to estimate unmet need for family planning for single women (see Figure 1).

Given the large comparability between these questionnaires, there is ample room to examine family planning in Europe over an extended period of time. This is particularly true for those countries that have participated in multiple or all data projects. Table 1 provides an overview of the data availability for European countries. Countries are only marked if the micro-data is available for research purposes. Of the 27 European countries for which data of at least 1 of the surveys is made available for research, data is available from at least 2 surveys in 17 countries, from at least 3 surveys in 11 countries, and for all 4 surveys in 4 countries.

Table 1: **Overview of European countries that have participated in the different international fertility survey projects and where the data are available for research purposes**

Country	WFS	FFS	GGS-I wave 1	GGS-II wave 1
Austria		X	X	X*
Belarus				X
Belgium		X	X	
Bulgaria		X	X	
Croatia				X*
Czech Republic		X	X	X
Denmark				X
Estonia		X	X	X
Finland		X		X
France	X	X	X	X*
Germany		X	X	X*
GB/UK	X			X*
Greece		X		
Hungary	X	X	X	
Italy		X	X	X*
Latvia		X		
Lithuania		X	X	
Republic of Moldova				X
Netherlands	X		X	X*
Norway	X	X	X	X

Table 1: **(Continued)**

Country	WFS	FFS	GGS-I wave 1	GGS-II wave 1
Poland		X	X	
Portugal	X	X		
Romania			X	
Russia			X	
Slovenia		X		
Spain		X		
Sweden	X	X	X	X

Note: * At the time of writing the data was not yet released, but data collection was either planned or ongoing.

4. Discussion

The current paper shows how to calculate contraceptive prevalence and unmet need for family planning using data from the second round of the Generations and Gender Survey (GGS-II). Measuring these indicators in the context of Europe is important because there are still disparities in contraceptive use between European regions (European Parliamentary Forum for Sexual and Reproductive Rights 2023). Moreover, the indicators give insight into mechanisms that can explain the frequent occurrence of unplanned pregnancies in Europe despite the high availability of contraceptives. In particular, they give insight into two common pathways that increase the risk of an unplanned pregnancy: non-use of available contraceptives and use of less effective contraceptives (Bajos et al. 2003).

Calculations for the Republic of Moldova show that 49% of the female population of reproductive age do not use contraceptives. Moreover, 1 out of every 5 Moldovan women who are in a union are not using any form of contraceptive, even though they do not want to become pregnant in the next 3 years. Non-use also occurs in high-income countries in Europe. A study in France shows that a third of unplanned pregnancies were caused by non-use at the time of conception (Bajos et al. 2003). In the Republic of Moldova, 11% of partnered women and 6% of single women rely on the withdrawal method and only 60% of all women have their demand for family planning satisfied by modern methods. Despite the lower efficacy of traditional methods, reliance on these methods is also common in other countries in Eastern Europe (Centers for Disease Control and Prevention 2014; Kantorová et al. 2020). The GGS provides a wealth of information that can be used to explain differences in contraceptive use, such as sexual and contraceptive autonomy, bargaining power within the relationship, and religiosity. This, in addition to socioeconomic and demographic factors, makes calculating these estimates using the original data source valuable, in addition to already available estimates provided by the United Nations Population Division (United Nations

Department of Economic and Social Affairs Population Division 2022b) and the Institute for Health Metrics and Evaluation (Haakenstad et al. 2022).

This paper shows that a large overlap exists between the GGS-II questionnaire and the first round of data collection (GGS-I), the Demographic and Health Surveys (DHS), the World Fertility Survey (WFS), and the Fertility and Family Survey (FFS). Combining information from GGS data with that from the other surveys creates new scope for cross-national and across-time analyses. However, not all family planning estimates are compatible across the different surveys. Short-term fertility intention is captured differently in the different data projects. However, previous examination of the influence of a change from a 2-year to a 1-year window has shown that unmet need is rather insensitive to changes in the definition of fertility preferences (Bradley and Casterline 2014). Fecundity is also captured differently across the different surveys. Future research should establish the extent to which this influences the estimation of unmet need for family planning. In the meantime, potential issues could be avoided by focusing on younger women, who are rarely infecund. Researchers interested in comparing low- and high-fertility countries should consider the definition of postpartum amenorrhea. Defining women as postpartum amenorrheic when they have had a child in the past two years tends to underestimate unmet need in high-fertility countries where a substantial proportion of the population is postpartum amenorrheic (Bradley and Casterline 2014). Researchers should also be aware of differences in the population examined. Surveys collected in the past, such as the WFS, mostly collected data from married women. Researchers interested in examining family planning among married women will therefore have a greater opportunity to examine trends over time than those interested in groups less often captured, such as men or single women. Examining the family planning behaviour of single women over time is also hindered by the fact that the GGS-I captured no information about sexual activity in past weeks. Those interested in examining unmet need for family planning among single women have to rely on FFS data collected in the 1990s and GGS-II data collected in the 2020s.

Some characteristics of the GGS make its data uniquely qualified to expand current knowledge about family planning use and needs. Historically, family planning was only estimated for women of reproductive age. An advantage of the FFS, GGS-I, and GGS-II is that these surveys have similar questionnaires for men and women and can therefore be used to examine family planning use and need among men. Moreover, GGS-II collects information about sexual activity for all women. This information can be used to prepare a more sophisticated measurement of unmet need among women who are in a union, who are now usually assumed to all be sexually active (Ueffing, Dasgupta, and Kantorova 2020). One of the most prominent differences with respect to other fertility surveys is the panel structure of the GGS. This allows examining whether individuals' contraceptive use and unmet need for family planning remain stable over time. The panel aspect could

also be used to examine if unmet need for family planning leads to (unplanned) live births, and if this differs across social groups. One critique of the way unmet need for family planning is measured is that some women who are characterized as having an unmet need do not actually have one (Senderowicz and Maloney 2022), because they do not have sex on a regular basis for example, or because they do not have sex that could lead to pregnancy (Senderowicz and Maloney 2022). The panel structure could give insight into this difference between potential and actual risk of an unplanned birth across different social groups and in different countries. Another advantage of the GGS-II is that it allows for the inclusion of country-specific modules. This could be used to further improve knowledge. A recent study in sub-Saharan Africa shows that demand-side need (lack of demand or desire to use available contraceptives) exceeds supply-side need (lack of access to available contraceptives) (Senderowicz and Maloney 2022). A further reduction of unplanned pregnancies and births in Europe depends on understanding this lack of demand or desire to use contraceptives or certain types of contraceptives. Therefore, it would be of interest to develop a module that captures information on the consistency of contraceptive use and the reasons for inconsistent or non-use (Cleland, Harbison, and Shah 2014).

5. Acknowledgments

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Appendix

A. Access to GGS-I and GGS-II data

GGS data is made available to employees of recognized research institutes who use the data for research purposes and agree with GGP's Terms of Acceptable Usage. It is recommended that estimates should be based on the latest data version available in your GGP User Space. Access to data can be requested by following these steps:

1. Register/ login as a GGP User via the orange button "Login to GGP User Space" in the top right of the homepage https://www.ggp-i.org/.
2. Go to Data -> Micro-Data Access https://www.ggp-i.org/form/.
3. Scroll down and click on the green button "Submit new form".
4. Scroll down and click on the green button "Continue to form".
5. Select data files.
6. Fill in the Applicant information and submit your request.
7. Your submission will be reviewed. You will receive further instructions via e-mail.
8. After access to the data is granted, the data can be downloaded via the website https://www.ggp-i.org/form/. Questions can be directed to ggp@nidi.nl.

B. Overview of questionnaire adjustments between GGS-I and GGS-II

Overview of questionnaire adjustments introduced between GGS-I wave 1 collected in the early 2000s and GGS-II wave 1 collected in the 2020s. The only adjustments that are mentioned are those relevant to calculating contraceptive prevalence and unmet need for family planning.

GGS-II wave 1: *"Are you or your partner/spouse using or doing any of the things listed on this card to prevent pregnancy at this time? Please name all of the things you use or do."*

- Condom
- Pills
- Intrauterine device
- Diaphragm/ cervical cap
- Foam/ cream/ jelly/ suppository
- Injectables
- Implants
- Persona
- Hormonal emergency contraception afterwards ('morning-after pill')

- Withdrawal
- Safe period method
- Did not use or do anything

GGS-II wave 1: The list of response options was extended with the options:

- Vaginal ring
- Female condom
- Sponge
- Patch
- Lactational Amenorrhea Method

GGS-I wave 1: *"Do you intend to have a/another child during the next three years?"*

- Definitely not
- Probably not
- Probably yes
- Definitely yes

GGS-II wave 1: *"Do you intend to have a/another child during the next three years? Please take into account only biological children."*
The list of response options was extended with the option:

- Unsure

GGS-I wave 1: *"Supposing you do not have a/another child during the next three years, do you intend to have any (more) children at all?"*

- Definitely not
- Probably not
- Probably yes
- Definitely yes

GGS-II wave 1: The list of response options was extended with the option:

- Unsure

Added to GGSII wave 1: *"When your youngest child was conceived, did you yourself intend to have a/another baby?"*

- Yes
- No
- Didn't mind, either way

"Did this pregnancy occur sooner than you wanted, later than you wanted, or at about the right time?"

- Sooner
- Later
- About the right time

"Has your menstrual cycle been restored since the last pregnancy?"

- Yes
- No

"Did you have sexual intercourse in the past 4 weeks?"

- Yes
- No

"How old were you when your menstruation started?"

"How old were you when you started menopause? If you have not started menopause, select not applicable."

C. Overlap and differences between WFS, FFS, GGS-I, and GGS-II

Table A-1:   Comparison of the questionnaires of the World Fertility Surveys (WFS), Family and Fertility Survey (FFS), Generations and Gender Survey first round (GGS-I) wave 1, and Generations and Gender Survey second round (GGS-II) wave 1

DHS*	WFS**	FFS***	GGS-I wave 1#	GGS-II wave 1##
Current pregnancy				
Are you pregnant now?	Are you currently pregnant?	Are you currently pregnant?	Are you currently pregnant?	Are you currently pregnant?
When you got pregnant, did you want to get pregnant at that time?	Did you become pregnant when you wanted to, or would you have preferred it earlier, later or not at all?	At the time you became pregnant, did you want to become pregnant, did you want to wait until later, or did you not want to become pregnant at all?	Just before this pregnancy began, did you yourself want to have a/another baby at some time?	Just before this pregnancy began, did you yourself intend to have a/another baby at some time?
Did you want to have a baby later on or did you not want any (more) children?			Did your pregnancy began sooner than you wanted, later than you wanted, or about the right time?	Did this pregnancy occur sooner than you wanted, later than you wanted, or at about the right time?
Previous pregnancy				
When you got pregnant with (NAME IN 407), did you want to get pregnant at that time?	Just before this pregnancy, did you want to be pregnant: at this time; later; not at all; earlier? (asked for all previous pregnancies)			When your youngest child was conceived, did you yourself intend to have a/another baby?
Did you want to have a baby later on, or not at all?				Did this pregnancy occur sooner than you wanted, later than you wanted, or at about the right time?
Fertility intentions				
Now I have some questions about the future. Would you like to have another child, or would you prefer not to have any more children?	Would you like to have (more) children, now or later?	At what age do you want to have your first child, at the latest?	Do you yourself want to have a/another baby now?	
How long would you like to wait from now before the birth of another child?			Do you intend to have a/another child during the next three years?	Do you intend to have a/another child during the next three years? Please take into account only biological children.
		Do you want to have children of your own some time? / Do you want to have another child sometime? / In addition to the child you are now expecting, do you think that you would want to have another child sometime?	Supposing you do not have a/another child during the next three years, do you intend to have any (more) children at all?	Supposing you do not have a/another child during the next three years, do you intend to have any (more) children at all?

Table A-1: (Continued)

DHS*	WFS**	FFS***	GGS-I wave 1#	GGS-II wave 1##
Contraceptive use				
Which method are you using? (Includes male/female sterilization	What are you currently doing (what method are you using)?	Which contraceptive method or combination of methods have you and/or your partner used in the last 4 weeks?	Are you or your partner/spouse using or doing any of the things listed on this card to prevent pregnancy at this moment?	Are you or your partner using or doing any of these things to prevent pregnancy at this time?
	Why can't you have any more? Is it because: You have become sterile following an operation	Have you had an operation that makes it difficult or impossible for you to have any (more) children?	Have you been sterilised or have you had an operation that makes it impossible for you to have a child/ more children?	Have you been sterilised, or have you had an operation that makes it impossible for you to have a child/ more children?
		Did you have that operation for contraceptive or medical reasons?		
		List contraceptive methods includes: sterilization current partner, sterilization ex-partner	Has your partner/spouse ever been sterilised or had an operation that makes it impossible for him/her to have a child/ more children?	Has your partner ever been sterilised or had an operation that makes it impossible for him/her to have a child/ more children?
Fecundity				
Self-reported infecundity are answer options in questions 804 (fertility intentions), 805 (fertility intentions) and 810 (reasons for nonuse of contraceptives)	Which of the following situations best fits yours: I think I can (still) have children; I think I can still have some, but I'm not sure; I think I can't have any more; I can't have any more.	As far as you know, is it physically possible for you personally to have a child, supposing you wanted one?	As far as you know, is it physically possible for you, yourself, to have a/another baby?	As far as you know, is it physically possible for you, yourself, to have a/another baby?
	Why can't you have any more? Is it because: Your spouse is sterile; Your spouse has become sterile following an operation		Do you think it would be physically possible for your current partner/spouse to have a child of his/her own if he/she wanted to?	As far as you know, is it physically possible for your current partner to have a child of his/her own if he/she wanted to?
When did your last menstrual period start?				Has your menstrual cycle been restored since the last pregnancy?
How old were you when you had your first menstrual period?				How old were you when your menstruation started?
Self-reported menopause or hysterectomy are answer options in question 236 (start last menstrual period)	Why can't you have any more? Is it because: You are in menopause			How old were you when you started menopause?
Sexual activity				
I would like to ask you about your recent sexual activity. When was the last time you had sexual intercourse?	Lately, let's say for the past two months, how often have you had sex? Several times a month; Almost every day; Several times a week; Once a week	Have you had sexual intercourse in the last 4 weeks?		Did you have sexual intercourse in the past 4 weeks?

Note: * Based on information from the Standard DHS questionnaire Round 8.
** Based on information from the French WFS questionnaire (Koops 2020).
*** Based on information of FFS Standard Questionnaire (UNECE 2022).
# Based on information of GGS-I Standard Questionnaire (Vikat et al. 2004).
Based on the information of GGS-II Standard Questionnaire (Gauthier et al. 2021).