TRUST FOR SOCIAL ACHIEVEMENT

Ralitsa Dimitrova
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Feasibility and Acceptability Longitudinal Study to Inform Future Adaptation of the *Nurse-Family Partnership* Pilot Project in Bulgaria

FINAL REPORT

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Nurse-Family Partnership
Helping First-Time Parents Succeed®

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List of abbreviations:

AAGR	Average Annual Growth Rate
BGN	Bulgarian Lev (national currency)
CEO	Chief Executive Officer
COVID-19	Coronavirus disease 2019
DAC	Development Assistance Committee
DHVS	Demonstration home visiting services
ECEC	Early Childhood Education and Care
EU	European Union
EU-SILC	European Union Statistics on Income and Living Conditions
GAD	General Anxiety Disorder
GBV	Gender-Based Violence
GP	General Practitioner
HESED	Health and Social Development Foundation
IPV	Intimate Partner Violence
IUD	Intrauterine device
KAP	Knowledge, Attitudes, Practices
MD	Medical doctor
MoE	Ministry of Education
MoH	Ministry of Healthcare
MLSP	Ministry of Labor and Ssocial Ppolicy
MU	Medical Universities
NAB	National Advisory Board
NAVA	National Alliance for Volunteer Action
NGO	Non-governmental organizations
NFP	Nurse-Family Partnership
NSI	National Statistical Institute
NUTS 2	Nomenclature of territorial units for statistics – basic regions for the application of regional policies (corresponds to the Bulgarian planning regions)
NUTS 3	Nomenclature of territorial units for statistics – small regions for specific diagnoses (corresponds to administrative provinces in Bulgaria)
OBGYN	Obstetrician-Gynecologists
OECD	The Organization for Economic Co-operation and Development
OSI-S	Open Society Institute – Sofia
RCT	Randomized Control Trial
SHOG	Specialized Hospital in Obstetrics and Gynecology
TSA	Trust For Social Achievement
UCD	University of Colorado – Denver
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
UNMPH	University Multi-Profile Hospital
USA	United States of America

1. Brief summary

1.1. Purpose, including intended audiences

The purpose of the study is to evaluate the feasibility and acceptability of the Nurse-Family Partnership program's pilot phase in Bulgaria. The NFP program was established in Bulgaria by the Trust for Social Achievement in 2016 with the aim to pilot the NFP model in Bulgaria and gather data on its feasibility and acceptability in national context. If the NFP model is found to be both feasible and acceptable, the TSA will aim to transfer the model's implementation and further replication to the government to provide preventive healthcare services and other supports for first time mothers living in segregated urban areas and in low-income households. NFP is a multi-component model and therefore its practical implementation and adjustment to the Bulgarian context requires cooperation among various professional groups: medical specialists in different fields of medicine, education professionals in universities, state (government) institutions, policy makers on national and local governmental levels, healthcare and social care providers in the government and non-government sector.

1.2. Objectives and brief description of intervention

Is the Nurse-Family partnership program acceptable in Bulgaria's communal and institutional context and is the program feasible? What are the main factors for achieving positive outcomes? There are four theoretically driven hypotheses related to the master question:

1. It is both feasible and acceptable;
2. It is feasible but not acceptable;
3. It is acceptable but not feasible;
4. It is neither feasible, nor acceptable.

Since the program is a multi-component one, some nuances of acceptance and feasibility are expected and therefore several multi-level indicators have been developed. After consulting with the core TSA team, in September 2016 the OSI research team adopted the OECD evaluation criteria (known as DAC criteria) as a main assessment approach in order to fit the highest international evaluation framework*. Tailored to the NFP program, the DAC criteria were operationalized as five tangible research questions as follows:

1. Is the NFP program suitable for the health and social systems? (Relevance)
2. To what extent have the goals been achieved? (Effectiveness)

* In December 2019, the OECD DAC released the revised and improved criteria for the evaluation of policy interventions, mainly by clarifying definition of the original 5 criteria and adding a sixth one – "Coherence". In order not to bias the initial assessment design and data gathering, the "Coherence" is formally not included in the report. However, by its definition: *"The compatibility of the intervention with other interventions in a country, sector or institution"* (OECD 2021) it corresponds to the idea of acceptability and feasibility of the current evaluation and is de facto considered.

3. Is it affordable or it is too costly to implement on a large scale? (Efficiency)
4. Have the outcomes of the target groups improved? (Impact)
5. Can providing NFP become a long-term public policy? (Sustainability)

Within the Bulgarian feasibility and acceptability study, eight out of 12 core elements of the NFP program have been evaluated through the DAC criteria and two elements have been added to better suit the national context:

- The client is low-income at the time of enrolment;
- Every nurse* has responsibility for a particular client;
- Home visiting services for the client begin during pregnancy and continue until her child turns 2 years of age;
- Nurses and supervisors must complete the initial training required by NFP International;
- Nurses must apply the NFP program guide, taking into account the individual strengths and challenges for each family and distributing their time between the set program areas;
- Each full-time nurse works with no more than 20 clients at a time**;
- Each full-time supervisor provides supervision to no more than 8 nurses at a time;
- The supervisor provides the nurse with reflective clinical supervision;

In order for the pilot program to work in the context of economically disadvantaged and vulnerable communities in the country***, two additional elements were added:

- The inclusion of a health mediator or a field assistant**** in the home visiting teams;
- Coverage of key medical needs for clients in extreme poverty (mothers and their children), i.e. prenatal care and prescription drugs and/or supplements.

The NFP core model elements were revised in 2017 by NFP International, a year after the start of the NFP Bulgarian feasibility and acceptability study had started. The revision added some of the basic requirements for the program implementation to the core model elements, and omitted other elements that were considered core in 2016. The added core model elements have not been included in the feasibility and acceptability study, but were considered requirements for the NFP nurses, clients and implementation team and have been implemented in complete alignment with the 2017 NFP core model elements. The core model elements that were omitted from the analysis but are applied completely by the Bulgarian implementation team are:

* Throughout the report, “nurse” will be used as shorthand for “family nurse”, which refers to the graduated nurses and midwives employed in NFP

** This adaptation was made for Bulgaria, since the program’s clients in the country require more support.

*** Based on a 2015 study caried out by Alpha Research under a contract with the Trust for Social Achievment it was concluded that the communities that meet the vulnerability and economic disadvantage criteria are mostly Roma and Turkish communities living in segregared areas in the country.

**** The NFP mediators in Plovdiv have an additional role of translators when is needed by the NFP nurse or an NFP client.

1. Client participation in the NFP program is voluntary;
2. Client is a first-time mother;
3. Client is enrolled in the program early in her pregnancy and receives her first home visit no later than the end of the 28th week of pregnancy.
4. Client is visited face-to-face in the home, or occasionally in another setting (mutually determined by the NFP nurse and client), when this is not possible.
5. NFP nurses and supervisors are registered nurses or registered midwives with a minimum of a Baccalaureate/bachelor's degree.
6. NFP nurses and supervisors apply the theoretical framework that underpins the program (self-efficacy, human ecology, and attachment theories) to guide their clinical work and achievement of the three NFP goals.
7. NFP teams, implementing agencies, and national units collect and utilize data to guide program implementation, inform continuous quality improvement, demonstrate program fidelity, assess indicative client outcomes, and guide clinical practice/reflective supervision.
8. High quality NFP implementation is developed and sustained through national and local organized support*.

1.3. Methodology

The study is based on participatory mixed methods approach and triangulation between qualitative and quantitative data. Several Roma community representatives were trained to work as enumerators, and the survey questionnaires were, at the time of their use, reviewed by local community representatives. All survey tools and interview guidelines were reviewed and approved by the TSA team before the fieldwork implementation. Nevertheless, not every instrument was initially tested with members of the community. All data gathering tools are designed to fit an on-going evaluation criteria of the three main phases of client participation: pregnancy, infancy, and toddler stage**. Seven main groups of stakeholders were identified and surveyed/interviewed:

- community at risk
- implementing agency
- decision makers
- healthcare system representatives
- healthcare education specialists
- civil society organizations
- competitor*** (i.e. another agent, implementing similar services in Bulgaria).

The quantitative sampling of clients is exhaustive. The qualitative sampling is based on a multiple-case approach.

* https://nfpinternational.ucdenver.edu/nfp-model

** The stages are defined by the implementation model.

*** The only organization considered as a competitor for NFP in Bulgaria is a program Implemented by UNICEF. More on the subjects is available in chapter 5.3.

The research ethics are framed by the non-malfeasance principle with particular attention to the psychological comfort of the respondents and with concern for personal data protection. Some cultural adjustments were also made to fit the local community specific needs.

1.4. Main conclusions

The NFP program has been found to be very relevant for the Bulgarian context and is in line with the long-term policies of the Ministry of Labor and Social Policy and the Ministry of Health.

After the first two years of the project implementation, the NFP service was found to have a higher cost per client than other social services, due to the initial expenses on the methodology adjustment, team training, etc. After the high up-front expenditures, the utilization ratio (regarded as number of clients per total annual price) is continuously increasing – i.e., the program implementation became more affordable over five-six years period. According to the license agreement, an experimental or quasi-experimental study is needed to assess the impact of the program. According to the calculations of this study there are potentially 8 regions* in the country with 1) the required combination of enough potential clients as an absolute number of people at the target age living within 50 km of an NFP site and 2) a relatively high ratio of nurses to total population.

The research assesses that the NFP is sustainable for the program's current scale but would not be sustainable in a bigger national scale up. This is due to two main factors in the health care sector: a critical lack of nursing staff across the country and additional pressure on the system by the COVID- 19 epidemic. Despite that, the implementation team has taken steps towards sustaining the NFP nurses and has demonstrated a problem-oriented approach in tackling the restrictions that COVID-19 posed on in-person meetings. The Bulgarian program stays true to each and every core model element of the NFP model.

According to the DAC criteria, all the core model elements were found acceptable. The communication and organizational planning are found feasible. Nurses have responded positively towards their intensive trainings over the years and the implementation team has worked to build internal capacity so that the trainings are more sustainable. Stakeholders support the program and would like to expand the eligibility criteria and regions in which the program operates. Visit- by-visit guidelines were also found feasible. The NFP data collection and reporting system is given a "more feasible" score compared to previous reports and is acceptable to the nurses. The health mediators have been assessed as both acceptable and feasible. They are accepted in the communities and mediate different aspects of the fieldwork and have been instrumental to the work of the NFP program during the pandemic. The coverage of some medical needs for clients (medication, medical check-up for clients during the pregnancy stage and others) in need is very widely accepted, but not as feasible in a national scale up scenario. However, the newly elected government has indicated their intention on providing free medication for children, so this element of the program could potentially become feasible if new national policies are introduced.

* Sofia (site 1) and Plovdiv (site 2) are excluded in that number

1.5. Recommendations

Some of the current recommendations are made with a potential national scale up in mind and might not be entirely relevant to the two currently operating sites.

The research recommends developing and using an effective communication strategy to help address the mistrust of segregated vulnerable communities. Working within the community is key and identifying an insider advocate for the program at the start can be helpful in addressing initial community concerns. It may be useful to form a larger alliance with informal and/or religious community leaders.

The research recommends that the lessons learned of current NFP mediators are summarized and used for future NFP mediators, since their work requires not only theoretical but also fieldwork knowledge.

The research recommends that any calculations on the price of service per beneficiary in the NFP program be done with the requirements of the State standards about the budgets of the social services for a more accurate interpretation of the acceptability of the program.

The research has found that advocating and creating a wider network of allies in working towards a nation-wide home-visiting service has the potential to change policies and should therefore be continued.

NFP has a place in the national social/healthcare services and should be popularized within other social/healthcare service institutions. These could serve as additional client referral sources if the program has a capacity to enroll more clients. **NFP also has a place as a socio-medical service and could be a part of the national structure for early childhood education and care.**

2. Background and rationale

The Nurse-Family Partnership is an evidence-based community health program, providing nurse home visiting services for vulnerable first-time mothers. The NFP program engages young at-risk, low-income first-time mothers, encouraging them to engage in health services and partnering with them as their child's first teacher, to understand early childhood health and development. In addition, the program also helps young mothers and their partners develop a vision for the future, encouraging them to get higher levels of education or complete education levels that they might not have completed, develop economic self-sufficiency through self-empowerment and employment.

To achieve this goal, the NFP program hires and trains medical professionals (midwives and nurses) to implement the NFP program with a high degree of fidelity to the original model, developed by Dr. David Olds*, University of Colorado, Denver.

The NFP program was developed in the United Stated linking trained nurses and first-time, at-risk moms.** The program has been adapted to the needs of different communities over the years. Each time, the program has been proven to improve the quality of life of children and their parents by reducing child neglect and abuse, reducing intellectual and behavioral problems in children at age 6, fewer hypertensive disorders during pregnancy and increased duration of mother's employment.

Professor David Olds' Nurse-Family Partnership program and the idea of visiting nurses taking care of women and children is deeply rooted in the American medical practice and started in 1976. Simultaneously with the NFP, a program of home visiting nurses targeted on abuse and neglect in USA has started in 1975 by the National Committee for Prevention of Child Abuse, which supports women who are not on their first pregnancy. Since its start in the 1970s, the NFP has been rigorously tested and is one of the most evaluated home visiting programs, considered to be the most effective for first time mothers, particularly those who are young and at high risk. Currently, there are many research and implementation sites in the USA, Canada, Australia, England, Scotland, Northern Ireland and Norway which apply this particular model of home-visiting***.

The Bulgarian context differs significantly. After the Bulgarian Liberation from Ottoman rule (1878), due to a shortage of any medical care, the war-time „feldschers"**** became the medical specialists that were responsible for various medical services related to emergency treatment and ambulance practice, including home visiting healthcare practices (Vracheva 2017). With the development of the healthcare system, the first school for medical nurses was established by the Bulgarian Red Cross in 1900. A three year curriculum of professional specialization "visiting nurse" within this school was established in 1924. The visiting nurses were trained to visit households

* Prof. David Olds is a professor of Paediatrics in the University of Colorado and the creator of the NFP program model.

** https://www.nursefamilypartnership.org/about/program-history/

*** More detailed information is avaliable here: https://nfpinternational.ucdenver.edu/international-program

**** Feldshers (orig. meaning "Batterfield barbers") were a wartime surgeons, taking care for injured soldiers in cases of swelling, bleeds, lacerations, bullet wounds and amputations

with newborn babies and to consult and advise the mothers. The principal of the nurse school by this time was the US nurse Rachel Torrens and the training program was built according to the Nightingale's curriculum and methodological approach* (BRC 2014: 36-37) which was prevalent at the time. Between 1945 and 1960s in the beginning of the Socialist regime in Bulgaria, a new organization of the healthcare system was adopted where general practitioners were responsible for the population's health within a district. Each general practitioner worked with a group of nurses who visited households within the district to provide vaccines, to perform routine medical check-ups (for example, blood pressure readings), and to assess the living conditions in the households of the newborns. There is no evidence that the nurses provided prenatal care. During the 1960s and up until 1989, maternity nurses working in the local hospital were responsible for visiting the mother and the newborn for several weeks after she had given birth, teaching her how to take care of the newborn.

In 1989, another healthcare system reform was made. Prenatal care and postnatal care was initially provided by the general practitioner in the first few years after the reform and later on, postnatal care was redirected to pediatricians, who also provided home visits for the first few months after a baby was born. While women could ask their obstetrician/gynecologist of general practitioner for advice about their own health, there was no formal way of teaching mothers – especially young mothers – how to take care of their newborn. Patronage care (or home-visiting) as a healthcare service offers series of consultations by a nurse or a maternity nurse for a pregnant woman or a young mother at her home. The maternity nurse, nurse or patronage nurse visits the family until the newborn is of a certain age (In the NFP program, the mother exits the program when the child is two years old). As stated, that healthcare practice is not entirely new for Bulgaria, but has not been widely practiced since the health reform of 1989. The experience of USA shows that patronage care is feasible and adequate practice, even within a free healthcare market. The effect of the patronage care is mostly visible after 20-25 years (It manifests as a tertiary prevention of teenage pregnancy, but it is also a primary intervention for the current newborns in the risk groups). **In addition to being a preventive intervention for teenage pregnancy and especially of repeat teenage pregnancies, home-visiting care has a long term added value in lowering the child mortality rate.**

Regarding the implementation of home visiting programs in Bulgaria, there are several types of nurse home visiting programs, categorized according to their underlying theoretical models. The authors Landy and Menna argue that each of these approaches has its merits and integrative approaches that combine the strengths from various methods and apply the most appropriate resolutions for a particular child and family are the most effective (Landy & Menna 2006).

The pilot phase of the NFP program began in 2016 in Sofia, Bulgaria with a team of 5 nurses and one supervisor, who began operating in one of the biggest segregated communities in the country – Fakulteta. The community in Fakulteta consists of Roma – an ethnic minority in Bulgaria (about 10% of the whole population of the country**), who often live in poor conditions. The Roma community is also socially and economically marginalized by the general population and often at

* Named after the English Florance Nightingale (1820-1910)

** Accoring to some non-offcial expert assessments

risk of developing healthcare problems due to the air quality during the fall, winter and spring*.

Gaining the trust of the community was a hard task, since many of the community members were used to other program models that have been implemented during the last 30 years of democratic governance in the country. The community was used to the idea of programs providing material benefits and NFP's approach to assist in other, long-term ways was considered strange. The program needed insiders to work in Fakulteta, so healthcare mediators (fieldwork assistants) were hired as an integral part of the implementation.Their role was to connect with people in the community, clarify the aims of the NFP program and seek out and enroll potential clients. Their inclusion proved instrumental and after a year, the program was well-known in the community and there were even clients that sought to be included in the program. That and the migration of clients within different neighborhoods in Sofia made the inclusion of other communities and neighborhoods possible. The grateful clients of nurses had their role as well, recommending nurses and the program to their friends and family members. After the initial steps of introducing the program and gaining fieldwork knowledge, the program was further adapted both in terms of their instruments** and in terms of the additional services and benefits***. The pool of clients was also increased, due to the lower number of first time mothers up to 19 years old. The program was opened for every first-time at-risk mother up to 22 years old.

The opening of a second site in Plovdiv during 2019 came with its own set of challenges. The site was first opened towards women in Stolipinovo – the largest segregated Roma community on the Balkan peninsula – that corresponds to the same client profile as the one in Sofia (site 1). However, the local community and the local clients spoke little to no Bulgarian, which created the need to hire fieldwork assistants (mediators), who are also able to translate for nurses during home visits. Initially, nurses attended classes to learn Turkish, but that proved ineffective, since most of the community spoke a local dialect of Turkish. However, the mediators and at times the mothers-in-law of clients were effective enough translators for the clients from Stolipinovo.

Due to a heavy migration from the neighborhood to other countries, the local pool of clients had begun getting shallower. To get more clients involved, the implementation team opened up the site towards all vulnerable or at-risk women aged up to 22, who were first–time mothers and were enrolled up to the 28th gestation week of their pregnancy in Plovdiv. The need for clients also created another solution to attract clients in Plovdiv. The local team established a referral network of local general practitioners and obstetrician-gynecologists. Stolipinovo is a predominantly Muslim community, with very traditional values and way of life. There is a value placed on virginity of girls stepping into marriages, which transfers to traditional marriages being performed around the 14 to 15 years of the girls. The marriages are arranged and girls get pregnant much younger than the average for the country (average conception age of NFP clients from both sites is 16 years). Traditionally, the new family lives with the husband's extended family – with his mother, father and siblings (and their

* Due to the comparatively lower price of solid fuels, they are the main source of heating in the winter for the community in Fakulteta. That results in deteriorating of the air quality and increased number of respiratory issues in children and adults.

** Reading materials for clients needed to be adapted to better suit the literacy level of most clients.

*** Nurses had to also consult and forward clients on available social services when they needed any of them. In addition, clients and their children were provided with medication and/or supplements when prescribed by a doctor.

spouses). Mothers-in-law play a significant role in the ways that the next generation is raised – they teach young brides on how to do domestic work and raise their children. Young brides usually lack basic education and don't have many contacts with people outside the family.

As an adaptation to the NFP program, NFP Bulgaria provides the children and mothers in the pilot program with free medication and supplements (prescribed by their general practitioner or pediatrician), as well as medical examinations for uninsured women and contraceptives. This adaptation was needed, since indirect payments by patients in Bulgaria, including payments for specialist examinations, prescription drugs, travel expenses, etc., are among the highest in the EU (46.6% in Bulgaria compared to the average level of 15.8% in the EU in 2017). These high costs for patients disproportionately affect Roma families due to poverty, high levels of unemployment and the related lack of health insurance, all further exacerbated by the COVID-19 pandemic which left many families without a regular income due to not being able to work from home. The severely limited access of uninsured pregnant women to health care further poses risks to the health of many mothers and children.* Given the lack of access to basic healthcare needs being met by the state, the adaptations described above made it possible for NFP to work on building parental capacity and other long-term goals. This adaptation was also used as a tool to help in participation rates of women in NFP Bulgaria in the beginning of the program implementation. The contextual adjustment of the NFP program in Bulgaria was vital for its future goals and the implementation team managed to do so, with the support and guidance of the experts at the University of Colorado, Denver and with local experts.

The first adaptation that needed to be included was the role of the fieldworkers/healthcare mediators, who create the connection between the NFP nurses and the local community and reinforce cultural safety for the community where the program takes place.

In addition, since many of the clients above 18 years old were medically uninsured, the implementation team included the element of "coverage of key medical needs for some clients, including medically uninsured clients, which could include, but not be limited to prescribed medicine for mother and child, hospitalizations, medical tests, etc.", to remove the financial barrier for following medical advice and receiving regular medical check-up during pregnancy.

As the fieldwork was developing and more clients were getting enrolled, the NFP nurses had shared that their experience is that the initial reading materials needed further adaptation due to lower literacy skills among clients. The implementation team adapted the reading material by simplifying the language and adding more pictures. That adaptation was useful within the second site, since the literacy in Bulgarian among clients in Stolipinovo was lower than the literacy in Bulgarian of clients in Fakulteta.

In 2020 the program was adapted further to respond to the COVID-19 pandemic and provide the NFP clients with online and telephone visits, when in-person visits were impossible due to safety restrictions.

* Roma Early Childhood Inclusion + Bulgaria Report (2020)

In March 2020 the Bulgarian government declared a state of emergency for a month, later on extending the time almost on a monthly basis. The NFP program had to operate in a state of uncertainty, since there was a lack of long-term planning on a governmental level on the longevity of the newly introduced restrictions on in-person gatherings, postponement of non-emergency operations and medical examinations. The program had to find a way to adapt to the new way of life and online work. Initially, the NFP nurses communicated with clients over the phone or over the internet in any way that was possible for the NFP clients.* That, however, was not entirely possible for every NFP client, since many of them are in low-income groups and do not own a personal cell phone or other phone. Whenever that was the case, the NFP mediator tried to visit the families and provide their personal phone to the clients so they could consult the NFP nurses.

Having access to healthcare professionals was exceptionally important for NFP clients since they felt better informed on what COVID-19 actually was, what it meant for them and their families and their everyday lives. The NFP clients had someone trustworthy providing them with advice that the government and the World Health Organization were giving at the time.

In the period between March and June 2020 the nurses continued giving online consultations and in-person consultations when possible. During that time there were nurses who left the program and their clients had to be assigned to the remaining NFP nurses on the site. The nurses who those clients were assigned to shared that there were moments in the beginning when it was hard for them to build trust with a client of a different nurse. Those problems arose from the restrictions of in-person visits and were later overcome.

Between June and November 2020, the NFP nurses were making predominantly in-person visits and in November, when the second wave of COVID hit the country, they had to go back to on-line visits. During that time, the implementation team was able to realize a project financed by the Municipality of Sofia that enabled them to buy tablets and access to the internet for each of their clients in Sofia so that every client would be able to meet online with their nurse when convenient. Nurses were able to provide visits for their clients online and in-person depending on the dynamics of the COVID waves in the country.

2.1 Research aims and objectives

The main research aims are:

- To assess the feasibility of the NFP program in Sofia (Site 1) and Plovdiv (Site 2) and in the context of the country.
- To assess the acceptability of the program at the local level (Site 1 and Site 2)
- To assess the acceptability of the program at the national level**
- To assess the fidelity of the program implementation in the country.
- Provide information on the goals set by the implementation team.

* The communication happened on almost every platform that was available for the clients.

** An objective specific to this report is to also describe the changes in attitudes of stakeholders towards early childhood care programs and the changes of the political context that are related to the elements of the NFP program.

The research is interested in:

- How do NFP nurses experience the program in each of its stages?
- How do NFP clients experience the program?
- What are the grassroots demands for the services and incentives that the program provides?
- What benefits of the program do the clients recognize during and after their participation in the program?
- Do the NFP clients change some of their behavioral or psychological patterns as they progress from stage to stage in the program and do they keep them after they have completed the program?
- Are the healthcare and social care systems ready and do they have the resources to implement the NFP program nationwide?

Implementing the NFP program in site 1 (Sofia) and site 2 (Plovdiv) has had certain challenges. In 2016 and 2017, both the implementation team and the local team had to overcome cultural and literacy challenges that were posed by their work in site 1 (Fakulteta, Sofia). There was a cultural "myth" within the community, that any activity connected to mothers and their children might lead to their children being taken away from them due to poor living conditions. The community made a cultural connection between the activities of the Bulgarian State Agency for Child protection and the activities within the program. However due to the active work of mediators, NFP nurses and local NGO partners, as well as the experience within the program shared by its clients, the community found that myth to be unsubstantiated. Between 2018 and 2022, the NFP was very well received by the local communities that were later included with the initial site, Fakulteta. Some of the NFP clients had relocated from Fakulteta to other (mostly) segregated communities in Sofia and had shared their positive experience within the program with their friends and families. That created a more trusting environment for new client enrollment and had increased the enrollment rates within the site.

Due to living in poverty, many members of the Fakulteta community associated the idea of a "program" being implemented with a material support that the program would be providing. Since NFP is a program that provides non-material support, it was hard to convince the Fakulteta community of the benefits of enrolling in the program. However, with the continuous work of the local team, the community saw the non-material benefits and any material support (key medical needs coverage of mothers' and children's needs, etc) was considered by clients as an important addition within the greater scope of non-material support that the NFP program provides.

Since Site 1 was the first place to test out the adaptations of materials, related to clients, it was also the site where those materials posed some challenges. The initial expectation of the adaptation and translation teams was that some of the Site 1 clients would be able to read the materials by themselves. However, the fieldwork showed that the initial way that the materials were presented was challenging for the clients. The feedback from clients and NFP nurses was quickly incorporated in the later version of the materials, making them simpler, shorter, and more clearly illustrated. Since this

adaptation, the materials have been received better by most clients, including clients with very low literacy levels and their families.

The challenges in gaining the community trust in site 2 (Stolipinovo, Plovdiv) were similar and were overcome with the intensive work done by NFP mediators, nurses and local NGO partners. Client retention was an ongoing challenge for the Plovdiv team, since Stolipinovo was part of a migration wave towards Western Europe. Many people that had been working in Germany, France and the UK had gained enough capital to move their entire families to Western Europe and young first-time mothers were moving abroad with them. The NFP responded to that by keeping the clients in the program for a period of three months, in case the family and the young mother decided to move back. However, in most cases, families remained abroad.

Another problem faced by the Plovdiv team was the retention of NFP nurses. The nurses that were originally recruited, trained and started working had begun to drop out of the team and it was hard for the implementation team to find other nurses and midwives to recruit and train. That was mostly due to the lack of medical staff in the country and the local hospitals' policy to increase the salaries of nurses to maintain and recruit additional staff, making the once very competitive salaries of NFP nurses to average nurse salaries in Plovdiv.

The final report is interested in describing how the national stakeholders perceive the need for a family-oriented nurse- family program and what bottlenecks and opportunities they see in implementing the NFP program as well as what alternatives exist in the national context. Alternative programs for home visitations are important since policy makers make decisions based on program effectiveness and its efficiency*.

2.2 Policy context

The NFP program initially targeted women and families living in segregated communities, at risk of poverty and more socially vulnerable – particularly first-time mothers under the age of 22. After a baseline study**, the data showed that most women that could benefit from the NFP program were living in segregated communities. The biggest at-risk segregated communities in the country are in the country's biggest cities – Sofia and Plovdiv.

When the program launched in 2016, almost 24% of Bulgaria's population was living below the poverty line***, with women making up a higher proportion of the people experiencing poverty compared to men. In 2017 the relative share of the poor in the country was around 22%, but the gender structure was kept, with more women being poor than men. The same goes for 2018 when the share of the poor in the country was 22,6% and the structure of more women being poor than men was still the tendency. Bulgaria is also the country with the highest percent of people living at risk of poverty and social exclusion in the EU. According to 2020 Eurostat data**** 33,65% of

* Efficiency is used as a term to describe the effects that each of the programs achieves for public resources required to achieve this effect.

** Done by Alfa Research Agency.

*** Data by NSI, EU- SILC.

**** https://ec.europa.eu/eurostat/documents/4187653/10321620/at+risk+of+poverty+countries%401.5x-100.jpg/f96b36bf-1657-ad1c-2275-f84bb4d27f49?t=1602680348828

people in the country have been living at risk of poverty. How the current pandemic has affected the poverty levels in the country is still not clear, but there is some data showing that 12,4% of people in the country were left without income due to the pandemic.*

Table 1. Proportion of people living below the national poverty line by gender and region of project implementation, in the period 2016-2019

Relative share of the poor	Sofia – city			Plovdiv		
	Total	Male	Female	Total	Male	Female
2016	20.6	19.4	21.6	21.9	20.1	23.6
2017	20.1	18.1	21.9	21.9	20.2	23.4
2018	20.8	18.3	23.1	21.0	20.3	21.6
2019	22.5	19.5	25.4	25.3	25.2	25.3

Source: NSI, 2021**

In 2021 the National Strategy for reducing poverty and promoting social inclusion was introduced to the public. The document states that "Poverty in the family can be an obstacle to carrying out preventive activities, despite the fact that for people under 18 and for some people with disabilities and chronic diseases they are free. Often these individuals do not have a general practitioner or dentist selected. This, in turn, often leads to a complication of their health, which affects their ability to integrate into the labor market and lead a full life. Poverty has a negative impact on children and on their normal physical and mental development. Carrying out preventive measures together with the early intervention ensures the children's growth and development in good health"***.

Despite the recognition of the connection between poverty and lack of access to healthcare, the draft of the document suggests measures to promote better access to healthcare for vulnerable groups by having healthcare mediators in vulnerable communities work closely with medical institutions and "perform certain action"****. There is no suggestion in the draft of the document that the government wants to implement a health care program in vulnerable communities by medical professionals.

In the same draft of the National Strategy, the government seems to recognize the need for better social services promoting early childhood education and care: "Efforts are focused on the development and promotion of early childhood development services with a view to risk prevention and early intervention, including early intervention for disabilities, better coverage and improvement of children's readiness for inclusion in the education system, promotion of responsible parenting,

* https://alpharesearch.bg/post/976-godina-sled-nachaloto-na-kovid-pandemiata-kak-se-promeni-jivotut-ni.html

** Latest available data is on 2019 obtained in 2020.

*** Draft of the National Strategy to combat child poverty, p.45

**** In the original document, the connotation of the text suggests that there might be certain medical services that could be provided to the communities by a healthcare mediator.

etc."* In addition to that, the National Health Strategy 2021 – 2030 recognizes the "community patronage cares" (i.e. home-visiting healthcare services) as a crucial form of additional support to the pre hospital medical services**. This means that, as a complex social-health program, the NFP has a current chance to promoted and it is likely to be one of the programs which the government would be able to support, once the program's effects have been studied according to the original NFP methodology of the University of Colorado.

The National Strategy for Improving Maternal and Infant Health 2021 – 2030 recognizes that there is not enough pre-natal care for mothers and there is lack of patronage care in the first few days after the child is brought home. The Strategy places importance on the uneven distribution of pediatricians and nurses in the regions of the country. In order to address that and many other issues, one of the measures in the Strategy is the creation of integrated health counselling centers for maternal and child health (Centers) in each of the NUTS 2 regions in the country. The way they work differs from region to region*** and are not consistent in terms of the services offered or eligible clients. According to the Strategy, those centers provide medical and social services to young people, mothers, their families, pregnant women and children between the ages of 0 to 18.**** The Strategy recognizes that ethnic minority groups***** have less access to medical care due to living in segregated communities where pediatricians and OBGYNs are not available and 60%****** of women in those communities do not have medical insurance. There are no other measures suggested to tackle these issues in the Strategy.

In 2021 an addition to Ordinance N.9 from 2019 was introduced, establishing free home-visiting services for newborns and their families by nurses, midwives and medical assistants******* but only for the first 14 days after discharge of the maternity hospital. This is insufficient time for mothers and babies living in economically disadvantaged households or belonging to vulnerable groups, since they suffer more social risks and circumstances and need additional cares, as a comprehensive survey shows recently (De Sousa at al. 2020).

According to interviews with medical university professors********, programs for patronage care are traditional for Bulgaria's healthcare system and were widely used in the past. The way that those patronage care services were organized was by quarters******** where nurses and midwives would have to visit the mother several times. Currently, according to a medical university professor, there is a way for first -time mothers to ask for a midwife or a nurse to visit them and give them

* Draft of the National Strategy to combat child poverty, p.48

** Draft of the National Healthcare Strategy 2021 – 2030, p. 34

*** NUTS 2 level

**** Vulnerable or at-risk mothers and children are not explicitly mentioned in the target groups of those centers.

***** Term used in the Strategy

****** The National Strategy for Improving the Mothers and Children's health 2014 – 2020, p.7

******* Medical assistants are trained to work independently or as a part of a medical team since 2014. They used to be called Feldschers prior to 1999 (similarly to other post-Soviet countries, and are clssified by WHO as paramedical practitionaires).

******** Done for the purposes of the study with professors of Medicine in Medical University of Sofia and Medical University of Varna.

******** A quarter consists of several neighborhoods organized by their geographical proximity.

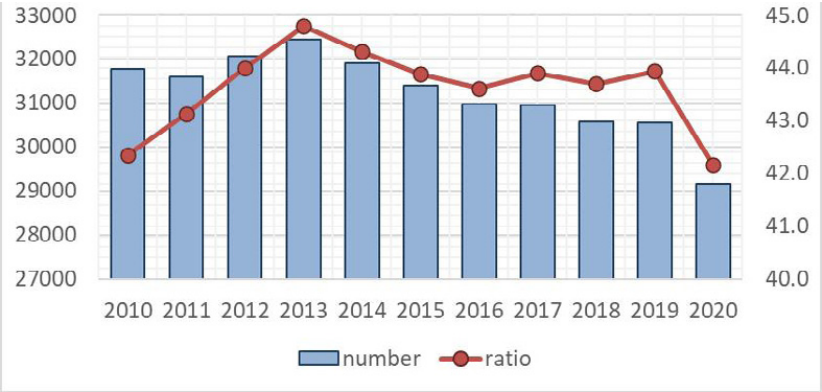


Figure 1. Total number of nurses and ratio per 10 000 inhabitants in Bulgaria in the period 2010-2020

Source: NSI and authors' calculation

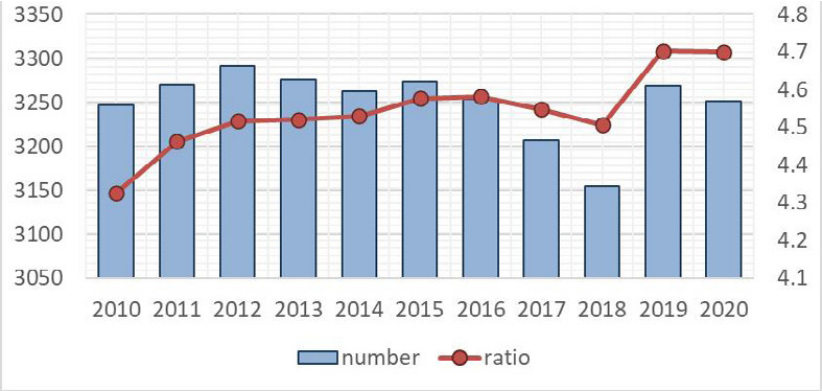


Figure 2. Total number and ratio of midwives per 10 000 inhabitants in Bulgaria in between 2010 -2020.

Source: NSI and authors' calculation

advice on motherhood but was unsure about what were the specific steps to ask for that visit via their general practitioner or gynecologist*.

Interviews with medical university professors also suggest that there are not enough midwives and nurses in hospitals to take care of the new mother and baby in the first days of their hospital stay. Recent data on the number of nurses in the country still shows that there are 43 nurses per 10 000 inhabitants and this number continues to shrink.

Another indicator showing how deep the issue of the shrinking number of medical nurses in Bulgaria has gone is the ratio of nurses per MD, which has decreased from 2.1 in 1980 to 1.0 in 2018. The OECD has classified Bulgaria as one of the countries with highest disproportion between medical doctors and nurses and is calculated to be second in the OECD countries with the lowest density of nurses.** This decline may be driven by the logic of the market economy and change of profession, coming with the higher income. According to data by the Bulgarian University Ranking system, around 9 000 MDs and 10 000 nurses and midwives graduate Bulgarian Medical universities for a decade, and the average age of a nurse professional in Bulgaria is 53 years of age. Despite the lack of data on migration of healthcare professionals from Bulgaria, there are many reports and interviews with healthcare professionals (MDs and nurses) who claim to have migrated due to higher salaries, more public respect towards their profession and the better state of the healthcare

* According to her, there is a mandatory visit by a pediatrician once the mother is home from the hospital and how she gets that visit is stated in Ordinance 17 by the Ministry of Health.

** OECD (2019), "State of Health in the EU – Bulgaria – Country Health Profile", p.12

system and hospitals. Table 3 shows that the number of medical doctors and dentists is increasing while the number of the less prestigious medical personnel is decreasing.

Table 2. Number of medical personnel in the years (1980-2020) in Bulgaria

	1980	1990	2000	2010	2015	2018	2019	2020
MDs	21796	28497	27526	27997	29073	29667	29612	29717
Dentists	4839	6109	6778	6355	7512	7240	7376	7312
Paramedics	7355	7617	3158	2417	2315	2145	2011	1919
Midwivfes	7897	7544	4131	3247	3274	3155	3269	3251
Nurses	45449	53810	31479	31786	31397	30589	30546	29160
Nurses per MD	2.1	1.9	1.1	1.1	1.1	1.03	1.03	0.98

Source: National Centre for Health Information and Analyses (about 1980-2000); NSI (about 2010-2018)

Lack of medical professionals may contribute to falling rates of breastfeeding within the first 6 months and lead to a bigger share of mothers using formula milk to feed their children. Another potential effect is that the increase in postpartum depressions rates among mothers from vulnerable communities. The medical university professors recognize the need for a family nurse that is close to what the NFP program offers, made easier in urban areas where the proximity of the household to the hospital may contribute to better visitation schedules by pediatricians, nurses and/or midwives*. This will be a greater challenge in rural regions.

*"Although medical universities are able to enroll enough students** in medical programs, there are less and less young students who are willing to go through four years of intense medical education to only find themselves underpaid and overworked due to the lack of people working in healthcare"***.* They share that there is a trend of people with higher education and some experience in other spheres to enroll in medical programs.

*"There is no way to motivate more young people to enroll midwifery and nursing majors because they have to pay 400 BGN per semester for 4 years, then have to take 4 really tough state exams to go and work in a hospital for a basic salary of 700 BGN per month. If there is a state policy for higher salaries for nurses and midwives, there will be more motivation and demand for those majors****."*

* According to an interview with professor in Medical University of Varna

** According to the national plan for student enrollment

*** Medical University of Sofia professor (March 2021).

**** Medical University of Varna professor (March 2021).

The ministry of Education classifies the health care professional fields as follows: "Medicine" "Dental Medicine", "Healthcare Services" and "Public Healthcare". And there are two types of specializations: as a medical practitioner (i.e. providing healthcare services) and public health experts (healthcare managers and analysts).

According to data on the number of students enrolled in healthcare services, there is a small decline. This trend has not changed, despite the Ministry of Education's policy to monetarily encourage universities in the country to attract students in these professional fields. However, this policy of the MoES* has resulted in an increase in the number of midwives and nurses enrolling in and graduating from healthcare services programs in the country.

Table 3. Number of students enrolled in Healthcare Services programs**

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of students enrolled in healthcare services programs	4722	5261	5920	6215	6505	6486	6361	6468	6808
Number of students enrolled in Public Healthcare programs	4055	3999	3915	3528	3464	3404	3255	3173	2873

Source: Bulgarian University Ranking System, 2021

2.3. Research limitations

During the 5-year period of the programs' feasibility and acceptability study there have been at least three different instruments used for the NFP client survey. During the first implemented instruments, some of the program's clients felt that the questions were too personal, or they felt like answering them might somehow harm them. This was due to the need to gather data on current health status and the economic situation of the family. In order to avoid the discomfort of clients, those questions were omitted and instead the final instrument only measures the attitudes and feelings of clients during their participation in the program. Any data derived from the first instrument therefore had to be omitted, due to lack of comparison with the variables in the later versions of the questionnaire used for the study. According to the research design, one client must take three surveys with the same instrument during the three different stages of the NFP program. The three-phase questionnaire was filled by 9 matched cases of clients in the three stages and 7 in the two stages of the program.

Quantitative surveying in Sofia was done entirely in Bulgarian, with the language being simplified for the needs of the fieldwork. In Plovdiv, since the NFP clients weren't fluent in Bulgarian, the survey was administered with the help of the NFP fieldwork assistant and/or the client's mother-in-law.

* Ministry of Education and Science

** "Healthcare services" and "Public healthcare" are professional fields in the Bulgarian education system consisting of different majors. Most of the students studying in those professional fields are medical nurses or midwives. This means, that a nurse, studying in one University in the country may graduate from a "Healthcare services", while another may graduate in "Public healthcare". Medical doctors study in another professional field – "Medicine".

This may cause some different interpretations and questions may not have been translated exactly the same way to all of the clients in Plovdiv. In addition, the inclusion of the fieldwork assistant and/or the mother-in-law of the NFP client may have caused the client to answer differently than they might have had if they had been alone with the interviewer.

The study gathers additional qualitative information from clients on their experiences and need and participation in the program to better describe the experiences of clients in different communities that the NFP operates in. Qualitative data from other stakeholders is used to gain a better understanding of the program's place within the national healthcare context.

Another research limitation comes from the COVID-19 pandemic and the political state of the country. In the period April-December 2021, a Caretaker government has governed the country since the two consecutively elected Parliaments (in April, and in July) didn't succeed to form a government and were dismissed. The Caretaker government has no mandate to introduce any new policies (since policies should be voted by the Parliament, which was not elected), creating an environment of stagnation in the implementation of social and healthcare services that were envisioned in the Strategies adopted by the previous government. Finding respondents from the Ministry of Health and Ministry of Labor and Social Policy for a follow-up interviewing was not possible.

3. Methodology

3.1. Research management

The Open Society Institute – Sofia research team uses a mixed-method data gathering approach. The research philosophy is based on participatory data gathering techniques and soft psychological approaches towards the NFP clients. Finding field researchers has proven to be one of the most difficult parts of the study. To conduct research with a questionnaire that is simple for the clients to understand, but has many internal filters and specifics is not an easy task on its own, but there is also a very specific set of soft skills (and demographic characteristics) that fieldworkers needed to display. Fieldworkers had to be women to not pose any psychological discomfort for young women within the NFP program and to comply with the cultural specifics of the communities within the NFP program. The community better received the fieldworkers who were from the community. However, due to the small number of people with particular skills in field research with those specific characteristics, the study was done with several different fieldworkers.

Members of the research team did most of the qualitative interviews, but trained interviewers, who are members of the community, have carried out interviews with some of the clients. They have been acquainted with the techniques and approaches in qualitative interviewing for the purposes of the NFP feasibility and acceptability study in Bulgaria. At the preliminary stage of the study, the work was set in a gender sensitive manner and all qualitative interviews with pregnant women and young mothers were conducted by a female sociology/social work graduate, who is close to the age of the respondents. According to the initial research plan, several focused groups were planned for the latest stage of the study as a wrapping up experience of the mothers and of the elders. No focus groups were conducted during that time due to restrictions of gathering of people.

The qualitative guidelines are based on a preliminary stakeholder analysis, approved by the implementation team. For each type of stakeholder, different interview guidelines were developed, with comparative core module elements.

3.2. Data gathering methods

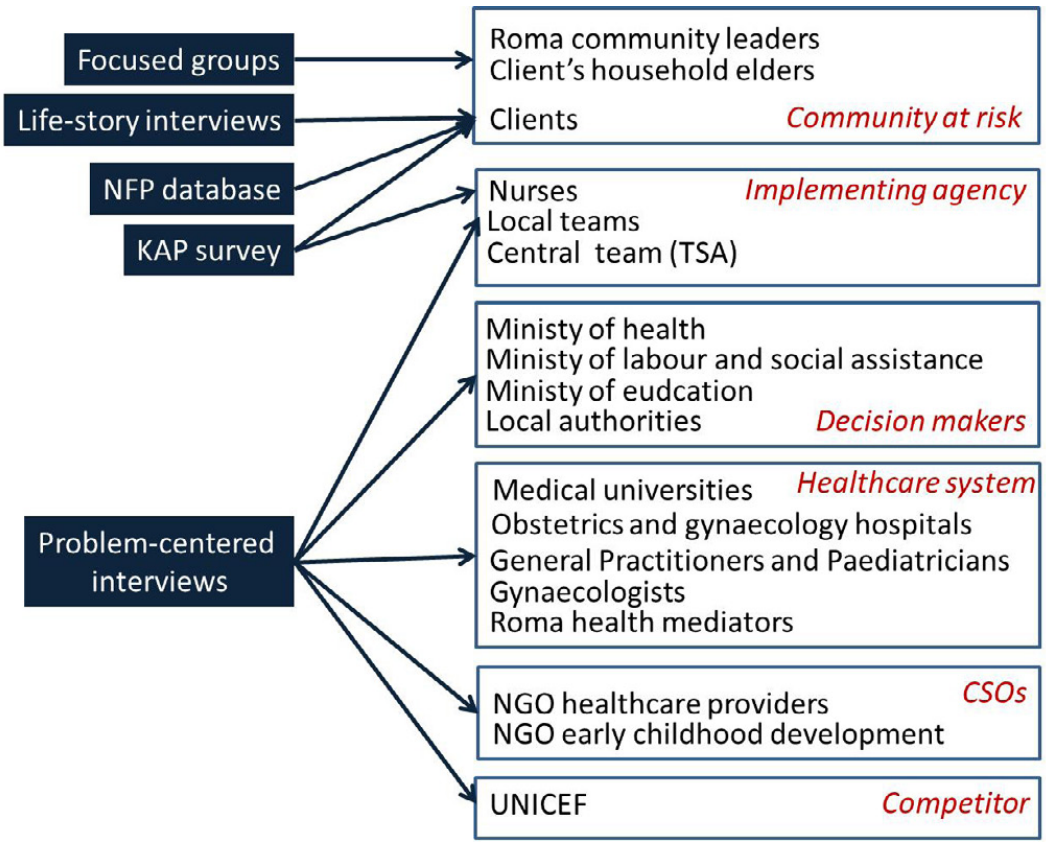
The research team has identified six major groups of stakeholders, each one with several types of key-role players. The group *Community at risk* represents the target population of the project interventions and is composed of the clients, the elders in the clients' households and the informal community leaders. The group *Implementing agency* is composed of TSA as the license holder of the NFP program, the local implementing teams (community mediators, coordinators, supervisor) and the nurses, who are intentionally discussed outside of the local team since they are the core element in the "Nurse-Family Partnership". The *decision makers* group consists of experts who represent key ministries or agencies about the intervention content of the project: healthcare, social care, child protection specialists and medical education. The local authorities responsible for these areas of content at the district, municipal, provincial and regional level are also listed as key stakeholders here. The *healthcare system* stakeholder group is composed of medical universities, obstetrics

and gynecology hospitals, general practitioners, and pediatricians (considering the children in the community), gynecologist (considering the pregnant women in the community) and the health mediators (licensed social-work providers, related to healthcare access and empowerment mainly for low-literacy members of the community, as well as persons without access to healthcare).

As *Civil society organizations,* the research team distinguishes between two types of NGOs: those working on the promotion of healthcare and those focused on early childhood development. UNICEF was listed as a *competitor* due to the aforementioned reasons. There is a need for comparative analysis of the two programs in order to assess the acceptability and feasibility of the NFP program in a competitive environment.

Sampling methods and data gathering methods were chosen specifically for each of the stakeholder groups. As the targeted population of intervention, the community at risk is triangulated by most methods: focus groups, life-story interviews (on the fertility choices and parenting), a quantitative survey on the knowledge (awareness), attitudes and practices (experiences and behavior), as well as by data analysis of the NFP database. The nurses are subjects in qualitative interviews based on problems, experiences and lessons learned during the three stages of the program implementation. All other stakeholders are approached by problem-centered interviews, designed in a modular principle (comparative element) but applied in a flexible manner (adjusted to the specifics of the stakeholder). The relation between the data-gathering method and the stakeholder is illustrated in figure 3 below.

Figure 3. Relation between data gathering method and type of stakeholder3. 3 Sampling strategies and selection of respondents/target groups



3. 3 Sampling strategies and selection of respondents/target groups

3.3. 1. Quantitative sampling

Due to the small size of the targeted population (N=100 per site), the research team had decided to run an exhaustive sample of the clients.

Due to the new GDPR regulations, the OSI-S was not provided with list of clients and their household addresses. However, in order to avoid the need of a secondary neighborhood screening procedure (which is feasible but not effective financially or with regard to time), the TSA and OSI-S developed an anonymized procedure of a purposeful (i.e. non-randomized) field walk in the neighborhood. The fieldwork mediator indicates the dwellings where a client lives. The enumerator would visit those dwellings in a blindfolded manner, i.e. not knowing the name of the client(s), the status in the project (pregnant-infant-toddler), and with absolutely no information about the living conditions, household composition, etc. The procedure reduced the need of randomized screening in the neighborhood, while not revealing any personal data about the dyad, household and the family issues.

The procedure was later adapted. To complete the whole set of three surveys with the same client a database of client's participation number in the NFP and first name was provided by the implementation team and filled in by the research team. Based on the longevity of their participation clients were pointed out to be surveyed. The surveying was done by a member of the research team who was introduced to the client by the NFP nurse. When required by the clients, the NFP nurse was asked to remain during the surveys and/or the interviews for the emotional comfort of the client and/or to take care of the client's child.

During the last two years of the study, the research team member and NFP nurse wore protective masks during the surveying and the interview and although provided with masks, some of the clients preferred not to use them. Requirements of social distancing were met most of the time but created an uneasy atmosphere during the interviewing and surveying of NFP clients.

3.3.2. Qualitative sampling

Qualitative sampling is purposeful and is made after stakeholder analysis. The philosophy of the sampling structure is based on the understanding for a multiple-case sampling approach (Miles & Huberman 1994). It is based on covering all types of stakeholders as listed, but also looking for a maximum variety of cases among clients and other stakeholders. It is designed to provide evidence not only for the normative behavior and consensus attitudes but also to find the "clinical borders" – normative exceptions and contrast deviations, which should enrich the perspective towards diversity of opinions and is needed due to the not homogeneous nature of the Roma communities (Pamporov 2008).

The matrix with initial stakeholder analysis frame for selection of respondents is presented in Appendix 1.

3.4. Data gathering tools

3.4.1. KAP survey questionnaire for clients

The new KAP survey for clients is based on mild psychological approaches in measuring the development of self-efficacy in the clients and their social environment, trust in others and other factors, important in Bronfenbenner's theory of human ecology. Much information on demographic factors has been excluded, mainly to eliminate any fears and discomfort in clients. The composition of the survey is not traditional in the sense that each topic is introduced and then every question on the topic is exhausted within this module. It has an open structure, and the topics are introduced in a sequence that would allow the survey to sound and feel like a conversation. This is important, since NFP clients do not feel comfortable in a situation that feels like an investigation into their life (with a closed structure) rather than an exchange of opinions and experiences (with an open structure).

Topics included in the KAP survey with clients:

1. Information channels for the program.
2. Demand for services – social, healthcare, educational, other.
3. Social network and network of trust for the client
4. Access and needs of services – social, healthcare, educational.
5. Decision-making, setting goals, standing up for herself, personal reflection on good and bad qualities.
6. Experience with the program and elements of the program
7. Personal attitude and gender-based attitude towards education
8. Attitude towards the healthcare and social care systems in the country
9. Social concepts for family and what family is to them.
10. Basic evaluation of the economic state of the household.

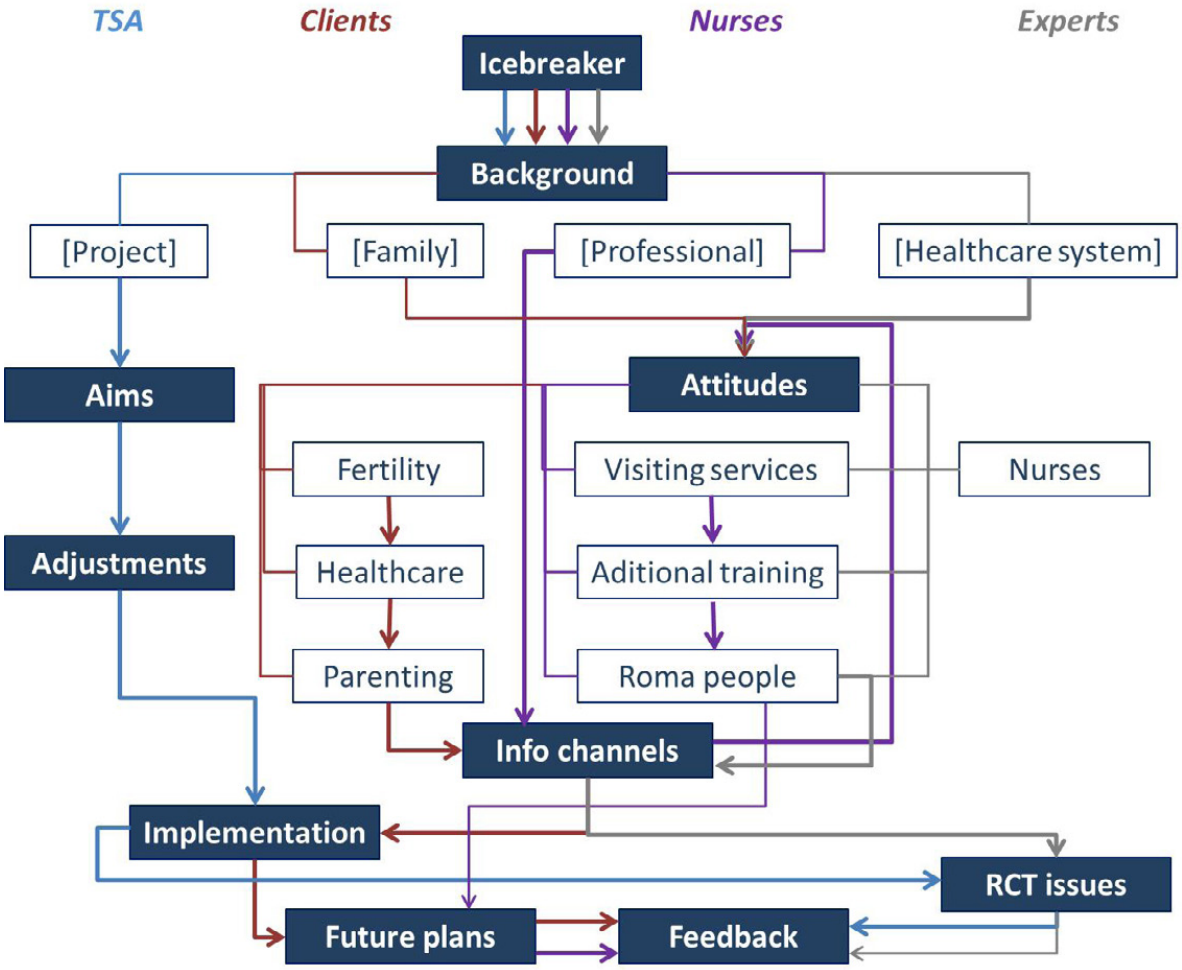
The current version of the questionnaire is included in Appendix 2.1

3.4.2. Semi-structured interview guidelines

Several interview guidelines were made – all adjusted to the specifics of the stakeholders listed above in figure 3. However, all the guidelines have a similar backbone and follow the same methodological principle. Therefore, there are some key cross points and correspondence between the different guidelines as it is illustrated in Figure 4.

However, for the purposes of conducting interviews over the phone during 2020 and 2021, some of the introductory questions may have been omitted by the request of the interview participant. The phone interviews were shorter than a normal interview – around 20- 25 minutes but were dense with information, feedback, suggestions and ideas.

Figure 4. The pathway of the semi-structured qualitative guidelines for face-to-face interviews with TSA team (blue), clients (red), nurses (purple), and other experts (grey), with key common modules (blue background, white font) and specific modules (white back)



3.5. Methodological limitations

The main methodological limitation in the current report is that there are not enough fully completed three-stage surveys with clients. Statistical analysis based on a dependent sample t- test to explore differences within the clients in Stage 1(Pregnancy), Stage 2 (Infancy) and Stage 3 (Toddler) would have been statistically reasonable if there had been at least 30 three-stage interviews per site. The 30 three-stage interviews per each site would also enable the statistical comparison with independent sample t-test between the two sites (Sofia and Plovdiv). Independent sample t- test would have enabled a statistical exploration on the changes that might appear within clients in their evaluation (scale questions) about their own experiences as women, their evaluation of their own self-efficacy and would allow for an exploration of possible changes in attitudes towards early marriages and subsequent pregnancies. The small number of interviews is mostly due to the heavy

logistical procedures of the fieldwork that require the interviewer, the nurse and the client to be at the same place at the same time. Some of the clients did not keep their appointments with nurses and there has to be rescheduling. The profile of the researcher had to also be quite specific – most of the clients did not respond well to interviewers who are older. Despite the training provided by the OSI team, the researcher had to have impeccable personal ethics to begin with. If similar research is conducted for NFP in the future, it is very important to have a mechanism for notifying the interviewer team when a client has become eligible for a stage 1, stage 2 or stage 3 interview. That would help interviewers keep track of their data gathering goals. Another possible solution might be the filling-in of surveys from the clients (if they are able to) or with the help of the NFP nurse. The heavy logistical procedure was further hardened by the COVID-19 pandemic with a withdrawal of fieldworkers. Health restrictions in Fakulteta (site 1) and Stolipinovo (site 2) were not complied with as these restrictions wearing a mask, keeping a social distance of 1.5 m would often lead to less trust between nurses and clients and between interviewers and clients.

Analytical framework and data development

The focus of the longitudinal study is to research the acceptability and the feasibility of the services and interventions provided by the NFP program in the Bulgarian context. The acceptability assessment is focusing on the way that the NFP clients, their families and communities, as well as the national authorities (such as Ministry of Health and Ministry of Labor and Social policy), NGO healthcare providers, medical education providers, general practitioners, pediatricians and other stakeholders react to the interventions and services provided by the Nurse-Family Partnership program in Bulgaria.

The feasibility study is done according to the OECD criteria for Evaluating Development Assistance, due to their international recognition and comprehensiveness. The OECD (or DAC) criteria by 2016 were:

- **Relevance**: the extent to which the aid activity is suited to the needs, priorities and policies of the target group, recipient and donor.
- Effectiveness: A measure of the extent to which an aid activity attains its objectives.
- **Efficiency**: Efficiency measures the outputs – qualitative and quantitative – in relation to the inputs. It is an economic term, which signifies that aid uses the least costly resources possible to achieve the desired results. This generally requires comparing alternative approaches to achieving the same outputs, to see whether the most efficient process has been adopted.
- **Impact**: The positive and negative changes produced by a development intervention, directly or indirectly, intended or unintended. This involves the main impacts and effects resulting from the activity on the local social, economic, environmental and other development indicators. The examination should be concerned with both intended and unintended results and must include the positive and negative impact of external factors, such as changes in terms of trade and financial conditions.
- **Sustainability**: Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn. Projects need to be environmentally as well as financially sustainable.

3.6. Possible data biases

The current study might have some biases due to the respondents' refusals to participate in the survey or qualitative interviewing (self-selection bias).

Another possible bias comes from the fact that the surveys and interviews in Stolipinovo have been carried out by a person who speaks Bulgarian. However, many of the clients in Stolipinovo do not speak or read in Bulgarian. This means that clients who do not speak Bulgarian have given answers in the survey and interviews through interpreters (which is usually provided by the client's mother-in-law and/or NFP mediators). That creates a possibility for their answers to be misinterpreted by the translator. This also means that the client may not be able to freely express their thoughts, due to social power dynamics within the household. That has also made interviewing clients in Stolipinovo more challenging than interviewing clients in other settlements in both Plovdiv (site 2) and Sofia (site 1).

4. Research ethics

Since the current research and report are based on healthcare sensitive cases, including infant children and parental cares, the research ethics of OSI-S team is based and elaborated on the UNICEF's *Procedure for Ethical Standards in Research, Evaluation, Data Collection, and Analysis*

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4.1 Non-malfeasance

The research design and the implementation of the current study follow the requirements of the "Do no harm" principle, which includes two main components discussed and accepted by the implementation agency:

4.1.1. Attention to the psychological comfort of the respondents

As respondents of the feasibility and acceptability research, the NFP clients can participate only voluntarily. The clients have the right to withdraw from the quantitative survey or to interrupt the focused life-story interview at any stage of interviewing, and the right to not answer as many questions as they find embarrassing or not proper for their attitude and experiences.

The refusal or participation in the survey are not and cannot be a reason for a change in the number or in the quality of expected interventions and offered services within the NFP project in Bulgaria.

It is recommended that both the quantitative and the qualitative interviewing be done in a face-to-face manner. However, if the respondent does not like the face-to-face setting and if the respondent explicitly wants another person to attend the interview, it should not be a reason to decline the interview. However, the interviewer should describe this circumstance in the log file of the study after the interview (not in the presence of the respondent) and – if possible – to indicate the social role of the third party attending the session: an intimate partner or spouse, mother or mother-in-law, a friend, etc.

The survey fieldworker and the interviewer should not argue against or contradict the respondent's statements and claims. When any doubts arose, it was indicated in the log file as a memo after the end of the interview (i.e., not in front of the respondent or her relatives).

4.1.2. Attention to personal data protection

Neither the research team, nor the fieldworkers have the right to discuss the issues of the current research at open i.e., non-specialized public audiences, since it applies to well-known segregated areas and may produce or boost negative stereotypes towards the local population. The only acceptable manner is for them to discuss it with targeted expert audiences and after consulting it with the implementation team.

The names of the respondents, the exact addresses, the ethnic self-identification (also including religion and native language), the daily routine habits, the household income, and the psychological

attitudes of the respondent should be treated as extremely sensitive data and should in no way be published or revealed by the research team or the fieldworkers. The only acceptable manner of publishing or discussing data is in an anonymous manner and in aggregated figures (to avoid recognition of the respondents).

The expert interviews could be quoted as a name and/or a position if the statement is done at a public event (for example: broadcasted by media or expressed at the local or national advisory board meetings), or if there is explicit informed consent, signed on paper or voice recorded. The informant consent is set and regarded according to the UNICEF definition: "The voluntary agreement of an individual, or his or her authorized representative, who has the legal capacity to give consent, and who exercises free power of choice, without undue inducement or any other form of constraint or coercion to participate in research. The individual must have sufficient knowledge and understanding of the nature of the proposed evidence generating activity, the anticipated risks and potential benefits, and the requirements or demands of the activity to be able to make an informed decision".

Since the children are at a very young age at the moment of their participation in the program and not able to understand and express their own will, the children and their personal experiences will not be directly addressed at this stage of the research.

4.2. Ethical and cultural adjustments

The research team has adjusted the initial approach towards the communities that are part of the research. The interview guidelines have been simplified, to help the team and the respondents have more natural conversations, the survey, as aforementioned, has been changed and a new milder approach to surveying the clients was adapted.

The interviews and surveys have not been found offensive or otherwise negative by the clients. Some questions, connected to the emotions that the clients experience, were not widely understood by the respondents, since lack of education and specific forms of communication may impact the self-reflection and understanding of emotions. Whenever the client was not able to completely comprehend a question, that was noted by the fieldworker and any changes in their understanding of the question will be noted as well. An example of that is the question regarding things they like and things they do not like in their character. Most clients were not able to reflect on their character or the way they perceive themselves to be. Their answers were kept to "Everything" or "Nothing".

The current instrument was not adapted for clients in Stolipinovo who cannot understand Bulgarian and was used by the fieldworker with the help of the healthcare mediator as a translator if and when needed. This could have potentially impacted the answers to the surveys as well.

5. Research outcomes

5.1. Relevance

In the previous three preliminary reports, NFP Bulgaria was given "very relevant" mark based on the OECD criterion. It is relevant to the country context given the relatively high infant and neonatal mortality rates, due to very high Age Specific Fertility Rates and Abortion Rates, as well as the Abortion ratio in Bulgaria by the age groups 10-14 and 15-19. Bulgaria remains one of the countries with the highest share of population of smokers, substance abusers and alcohol users. The trends have not changed positively, so the program remains highly relevant for the country context.

The goals of lowering the number of infections during pregnancies and miscarriages are found to be relevant, since clients ages (18-22) are not entitled to free healthcare and given their economic disadvantage (which is one of the vulnerability criteria for enrolling in the NFP) are at risk of lacking access to healthcare services during their pregnancy. A study in Plovdiv based on data from "St. George" Hospital shows that younger mothers (up to 20 years old) suffer more miscarriages and give more underweight births than mothers who are in the older age groups (Age 20+).

The program was also in line with the political will of the government at that time and the wish to re-establish the nurse-visiting services in Bulgaria (known already in the period between the late 20s and late 80s of 20th century). However, the political context in that respect significantly changed in 2018-2019 when several conservative civil organizations, the Bulgarian Orthodox Church together with the Union of the Evangelical Denominations, as well as some nationalist parties, demonized the UNICEF activities (including the patronage nurses). They succeeded in postponing the adoption of the Strategy for the Child as well as achieved a defer of six months of the Social Services Law, which aimed to regulate all types of social services for vulnerable groups. The social work and nurse visiting services are often described as an element of a "child kidnapping mechanism" in the public discourse and seriously jeopardize the further implementation of the nurse-visiting services at the national level. Neither the government nor the prosecution office have acted timely in order to stop the demonization of UNICEF and stigmatization of the child-protection services (including the patronage nurses).

However, in recent years there is a significant push towards early childhood education and care in the strategic documents in the EU including the Child Guarantee for vulnerable children that aims at providing free healthcare, free education, free early childhood education and care, decent housing and adequate nutrition. The project for the National Strategy for overcoming childhood poverty has recognized the need for the development and implementation of a national ECEC quality framework that will allow for self-assessment and monitoring of quality progress at institutional, regional and national levels. In order to combat childhood poverty one of the proposed measures in the project for the Strategy is to improve the existing governance structure for the scope and quality of early childhood education and care in order to offer an integrated system for a more balanced approach between care and education and accessible services for all households in need. **That measure is not specified further but NFP could be part of this widening scope of early childhood care**.

The NFP program's clients are usually people with low-income and other vulnerability factors. In 2019 Bulgaria has one of the highest shares of people living in risk of poverty and social exclusion (33,9 %) in the EU and has one of the highest shares of children living in risk of poverty and social exclusion (22,55%). Bulgaria's 84% overall kindergarten participation rate of children aged 4 to 6 remains below the 95.4% EU average. Participation of children from Roma descent in early childhood and education was still significantly lower than the participation rate of children from Bulgarian descent. In 2016, about 66 % of Roma children had received ECEC services.

"We still have much higher percent of mother and child mortality rates in the EU and that has a lot to do with poor and vulnerable women not accessing healthcare".

A professor from Medical University – Varna shares that the NFP program is very relevant to the needs of Roma and otherwise vulnerable women but finds that the requirement to enroll pregnant clients no later than their 28th gestation week is restrictive and would like to see the program opening up their eligibility criteria to women up to 34th gestation week. *"NFP should be implemented in other regions of the country as well – especially Sliven, where there are a lot of poor and vulnerable young mothers and a branch of MU – Varna".*

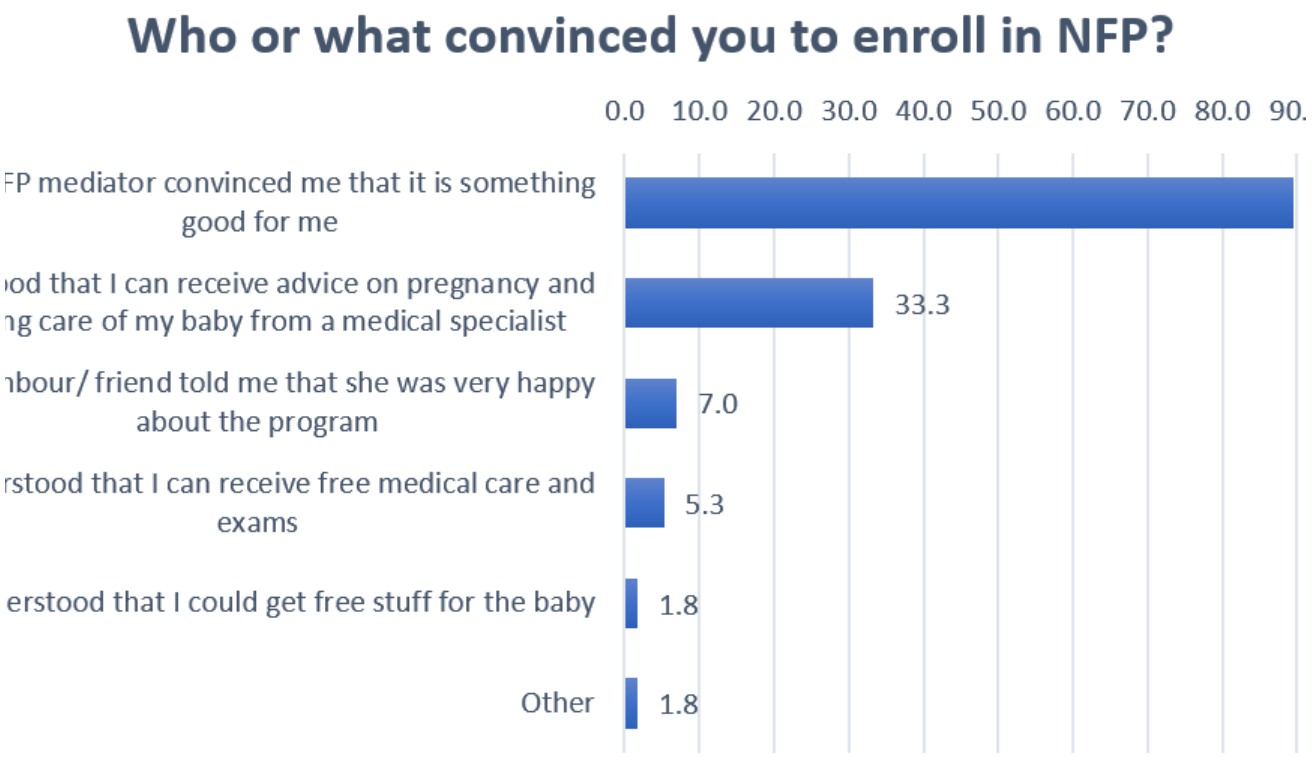
In the end of 2019 and early 2020, the NFP implementation team had tested out enrolling clients later than their 28th week gestation, since the NFP program allows for that in other countries. That was done to explore whether the pool of clients would be deepened. However, clients enrolled later than their 28th gestation week showed less interest in the program, did not have adequate time to build a trusting bond with the NFP nurse, and were more likely to drop out of the program. Therefore the NFP team decided to keep the 28th gestation enrolment criteria for Bulgaria.

According to an interview with the Child Protection agency **the NFP program and its work with not only mothers but also their families is one of the keys to a long-term success in helping families combat issues like domestic violence and childhood abandonment.**

Local communities also find the program very relevant. In Fakulteta neighborhood (Sofia) women share in interviews that they often feel like the NFP nurse is the only one who really cares about the well-being of their children and they often feel more secure when they have her around. Providing additional medication (if prescribed by a pediatrician or a GP), as well as supplements to overcome anemia is also important for the communities.

NFP mediators and their role in the fieldwork have also been found exceptionally relevant to the communities that NFP operates in. According to data based on the survey done for the purposes of the feasibility and acceptability study, women pointed out the role of the mediator as one of the factors for their enrollment in the program.

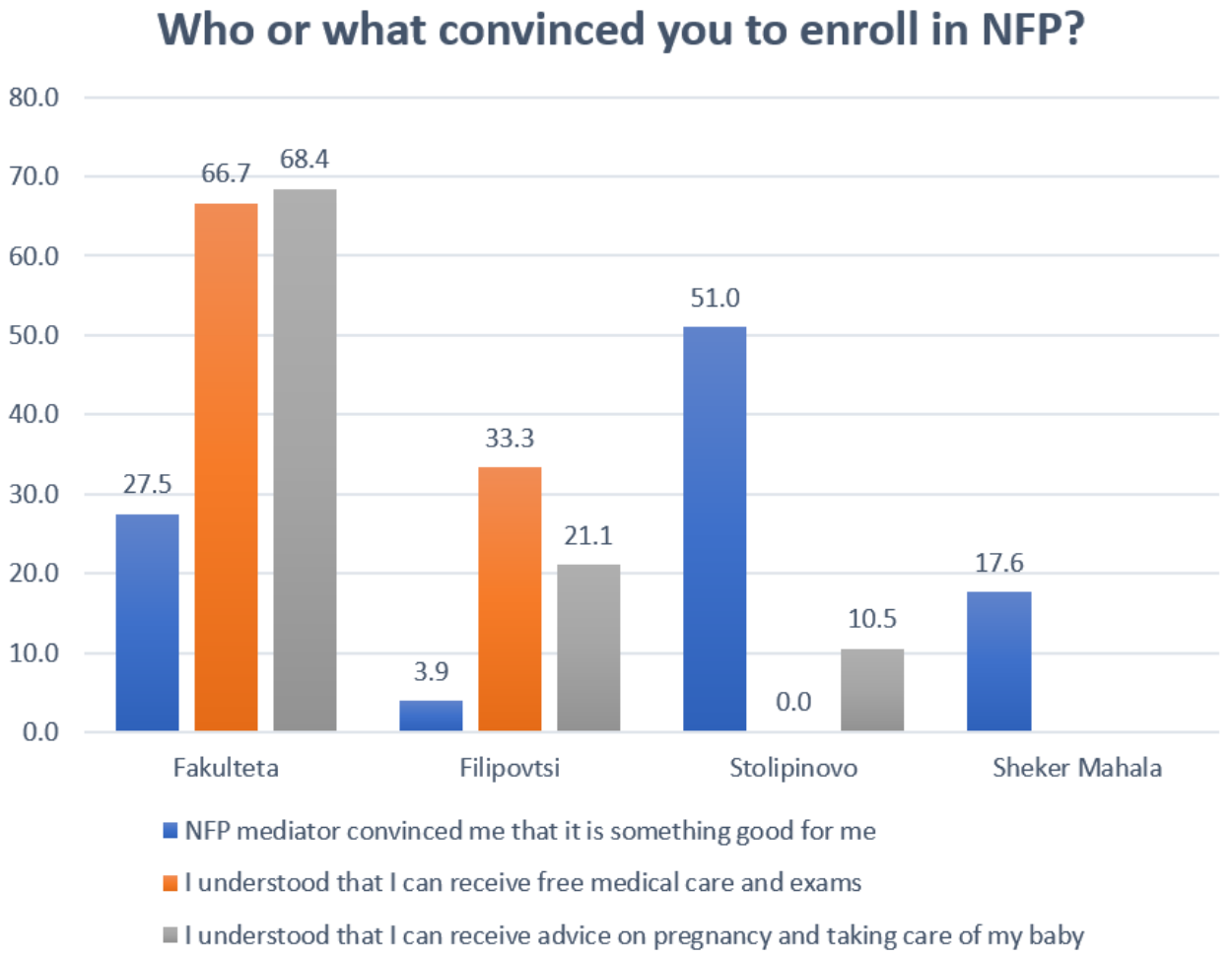
Figure 5. Distribution of answers of clients for each of the stages of the NFP quantitative survey



Source: OSI- S KAP survey

However, the mediator figure was relevant to a different extent depending on the site that the NFP was being implemented in. Data shows that a significantly larger share of women in Stolipinovo neighborhood (Plovdiv) were convinced to enroll in the program due to the mediator figure. There is a possible data bias that might be contributing to this, since women in site 2 (Plovdiv) were surveyed right after the beginning of the program implementation within their community. That means that many of them had no other way of finding out about the program, since none of their peers, friends and family had graduated or participated in the program before them. NFP clients in site 1 (Sofia – Fakulteta and Filipovtsi) were surveyed with the current instrument after the program had been operating within their communities for over a year and they might have had more friends, family members or other peers participating in the program by the time they were surveyed.

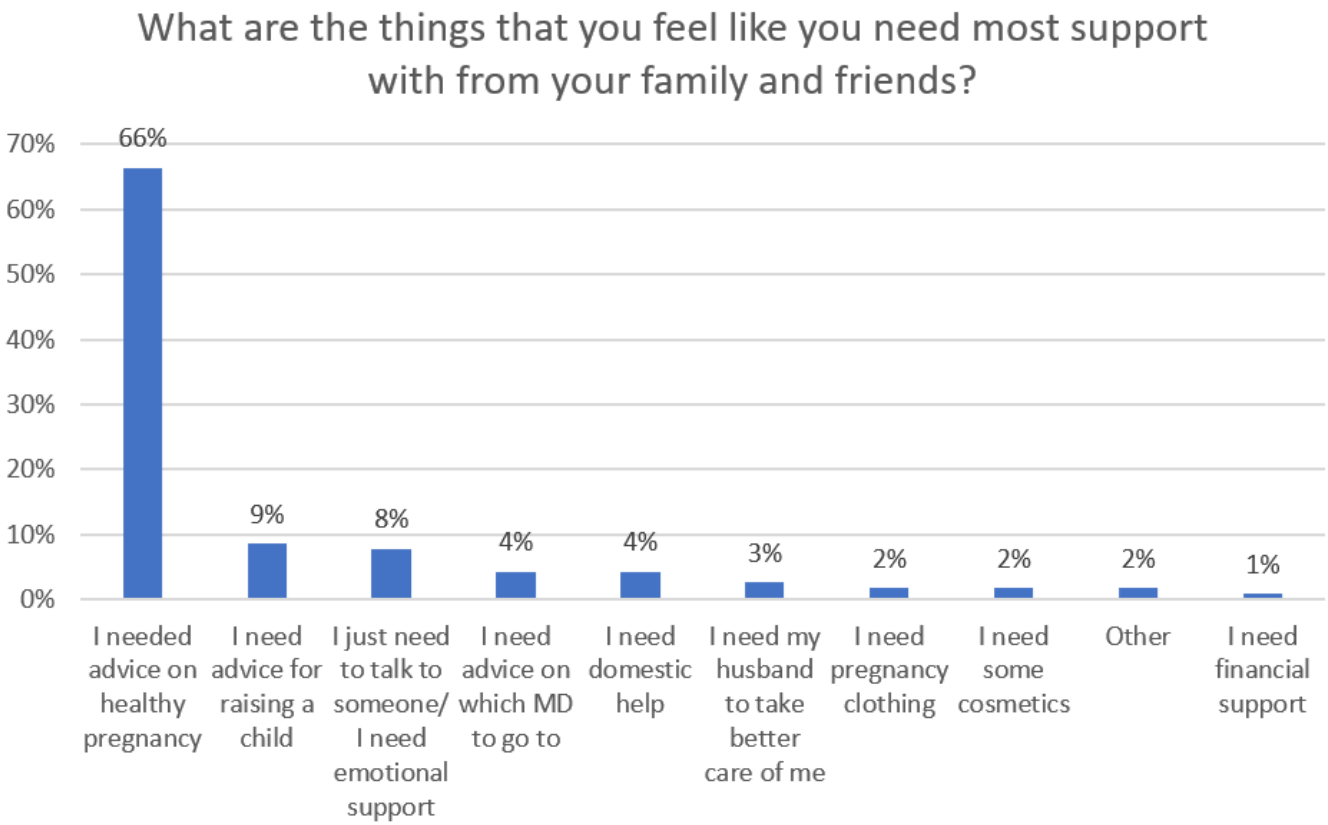
Figure 6. Distribution of answers of clients for each of the stages of the NFP quantitative survey.



Source: OSI- S KAP survey

NFP clients feel like they need advice on pregnancy and taking care of their child. An overwhelming number of clients shared their need to get advice on achieving healthy pregnancy. If the NFP were not available to them, they would ask for advice from their friends and family. Since NFP is available for them, they could get medical advice from medical professionals. Given the medical system in the country, medical professionals rarely do home visits and it would be almost impossible to assess the living environment within the patient's home, their eating habits or their cigarette and alcohol consumption. A home-visiting program such as NFP has the advantage of addressing the issues that might lead to less healthy pregnancy within the domestic environment of a client – their normal eating or cigarettes/alcohol consumption habits, etc. The clients need advice on their pregnancies and are eager to receive them.

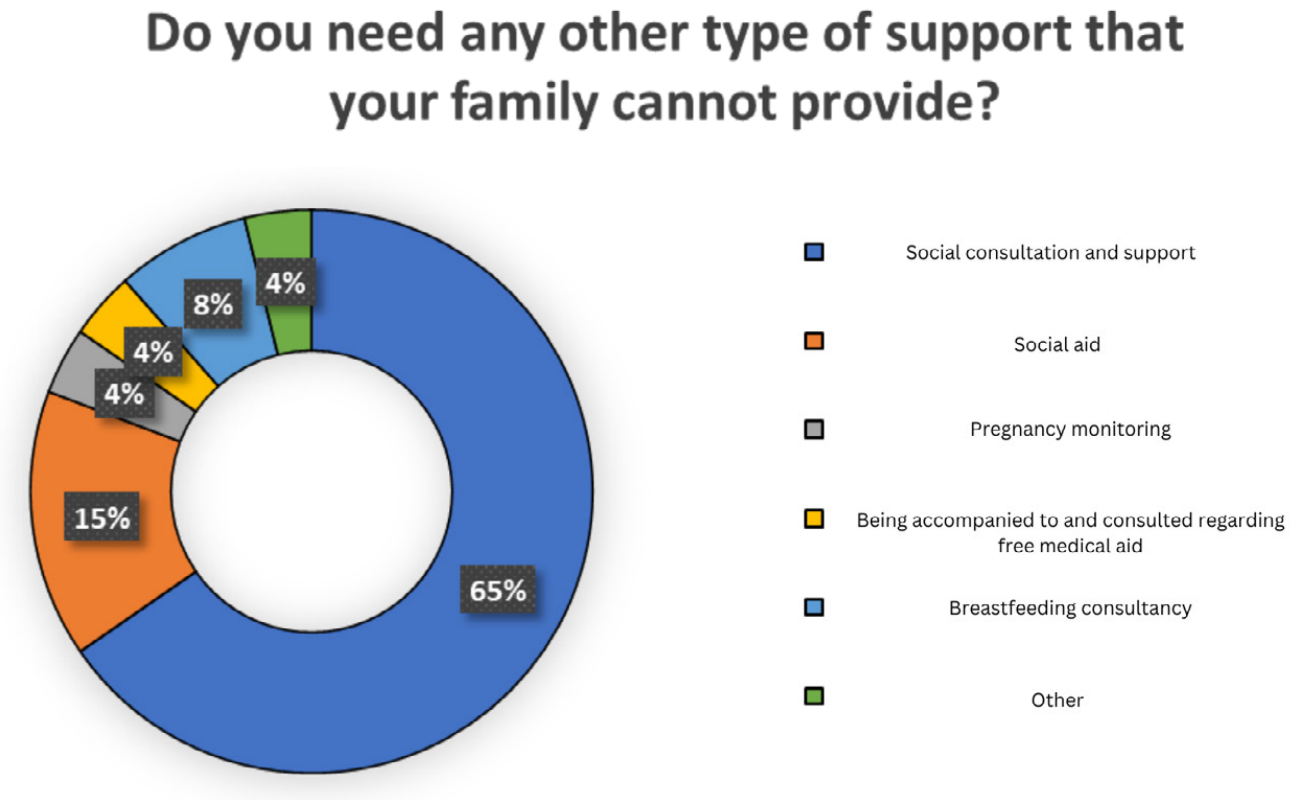
Figure 7. Distribution of answers of clients for each of the stages of the NFP quantitative survey



Source: OSI- S KAP survey

Given the socio-economical profile of NFP clients, the program also works towards providing consultancy on social services that the clients might need. It also provides support for clients that need help in filling in documents or finding the right institution to address their needs. The social aspect of the NFP program is found to be very relevant to the communities it operates in, since many clients share their need for support in getting social aid or receiving consultancy on what social services might be available to them. **In that way NFP achieves two things – it provides social support for the NFP families, but also creates a network of people and institutions that have to work together to provide social support for vulnerable families.** The NFP nurses and staff create channels that their clients might use in the future and help in creating better comfort with and self-efficacy in working with institutions.

Figure 8. Distribution of answers of clients for each of the stages of the NFP quantitative survey.



Source: OSI – S KAP survey.

An NFP service or an NFP like-service is very relevant to the communities where the service is piloted. Also, **it may be a relevant addition to a more holistic approach in policies combating child poverty and ECEC for the Bulgarian government.**

5.2. Effectiveness

5.2.1. Program materials

Most of the materials used in the program were first adapted in 2015 - before the beginning of the program implementation in 2016. The adaptation was done by a team of experts in maternal healthcare, breastfeeding and early childhood development.

Although the initial adaptation managed to get the materials in the nurses' hands and put them to test in their actual everyday fieldwork, the nurses recognized the need for further adaptation of their materials. In qualitative interviews, some of them indicated that the materials were written in a manner that is incomprehensible to people with lower levels of education. "*Some of our clients are completely illiterate and not every material works, because it's still mostly text. And the text is*

not that understandable either." The materials on different topics considering maternal healthcare, childbirth and many others were usually simplified by the nurse and her understanding of what her client wants and needs to hear.

Despite those opinions shared in 2016 and 2017, according to interviews with both nurses and clients in Sofia (site 1) in 2019 the materials are found to be very useful to them. "*My clients are interested in the materials and we use them a lot. Sure, some of them can't read it, but they look at the pictures and remember what we have been talking about. And when I ask her if she had used the materials after my last visit, she starts telling me everything she remembers from our last talk. So, they are useful*".

> *"I like the things she (the nurse) leaves me, because I have something to read. I used to tell her, leave me more, so I can read to my kid, before bed. We don't have books and I am tired of telling her the same old fairy tales. She (the child) makes me read to her every night*".

Some clients share that they do not read the materials, because they are not able to read, as one of the NFP nurses in Site 2, Plovdiv points out "*We can't further adapt the materials. They can't read and that's the end of it. I am not sure that even if we translated the materials in Turkish, they will be able to read them, since the Turkish in the neighborhood is mostly spoken.*"
The research team was interested in the ways that the materials could be further adapted to suit the different language community of Stolipinovo (site 2), whether by using more pictures or by using simplified phrases. However, according to the nurses in both Sofia and Plovdiv, the best way to use the materials with clients who can't read is to explain them to the client in a way that is comprehensible to her and in the language, she is using, if possible.

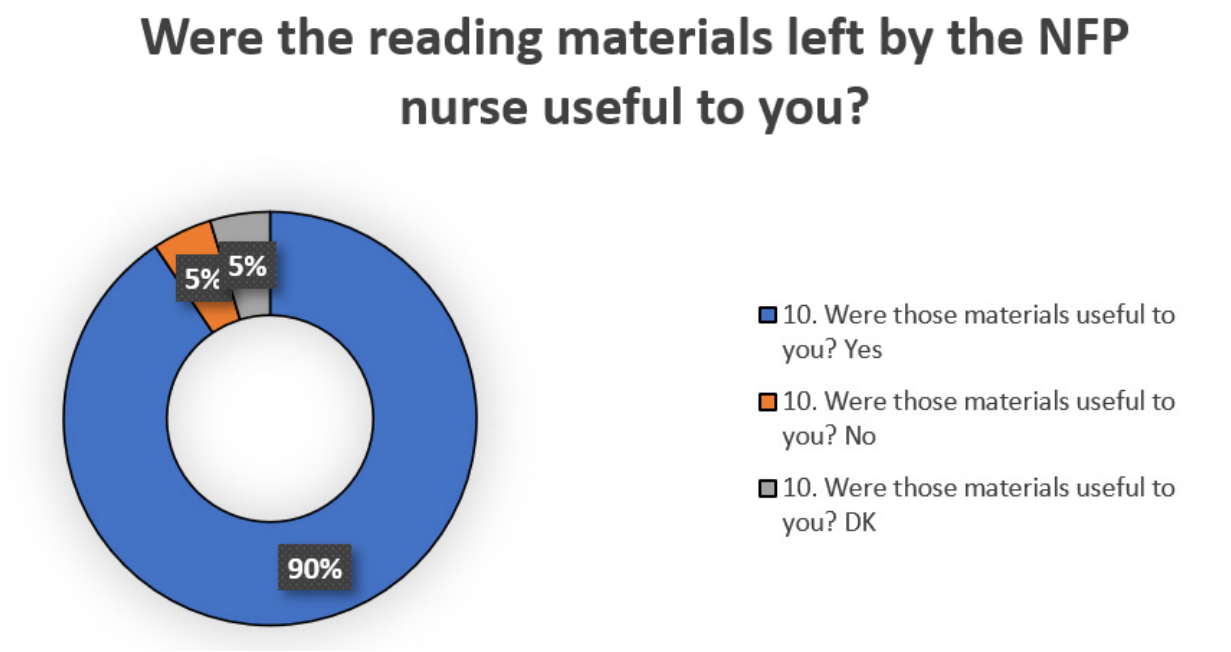
> "*Other materials are very useful. We have these beautiful dolls that the clients love. Since they haven't gone to school, they can't really imagine what the baby looks like in their bodies. They ask all sorts of questions and when you show them the dolls, they begin to understand. Not only this, but our dolls have the natural weight that a baby has – we even have a premature baby doll. We have one with a placenta attached to it. They are mesmerized by it.*"

The initial response of the nurses towards the program materials has changed with their experience of the program and its materials. *"I use them only for the pictures sometimes, but it helps me too - I know what the most important things I should tell her are. And, of course, I can change them if I notice something in her home or environment or even attitude that might be important to talk about.*"

According to data from the quantitative survey, every client has received reading materials from their NFP nurse. Most clients (90%) found them useful. The main reason for not finding the materials useful was that the client could not read or that they did not have the time to read them.

This is especially true for Stolipinovo (Plovdiv, site 2), where the majority of clients were not able to read the materials by themselves. However, most of the time, the materials were read to them by their mothers-in-law.

Figure 9. Distribution of answers of clients for each of the stages of the NFP quantitative survey.



Source: OSI – S KAP survey.

Apart from the reading materials, the weighted baby dolls had a great reception amongst clients as well. Dolls are used as a tool to improve parenting skills and to disprove any traditional ways of taking care of a newborn that might have been proven to be dangerous for newborns.

> *"Mothers-in-law are used to shaking the newborns up and down to calm them down. That could be harmful for the child's brain. So we ask them to show us how they would usually calm the babies down on the dolls and if we see something that might not be the best, we show them how to do it on the dolls. In addition, I feel like they are better prepared when they get to hold their own child in their arms. Also, we show them how to give the newborn a massage, if they have colic and they cry".**

The cultural norm of raising children in the Turkish speaking part of Stolipinovo discourages the use of toys. Once the NFP nurse shows the baby weight doll to her clients, who have been raised in that particular cultural norm, some clients have been reported to cry happy tears, others have laughed, but perceive them very well overall. Weight dolls are also used in Sofia as well and

* Nurse, Plovdiv, 2020 interview

NFP nurses in Sofia have assessed them as an important tool to improve parenting skills. The clients' responses to weight dolls in Sofia have not been reported to be as emotional as the ones in Stolipinovo.

5.2.2 Coping with client and nurse attrition

Client and nurse attrition has been a problem on various occasions during the NFP implementation. Site 1 has had a stable number of clients, nurses and healthcare mediators overall, but since opening Site 2 (Plovdiv) the implementation team had to cope with several problems. Stolipinovo (in Plovdiv) has witnessed an increase in the emigration of families towards Western Europe (Germany, UK and France). This meant that the main reason clients were leaving the program was emigration. Clients were also reluctant to enroll, due to their plans of moving.

Retaining mediators in Site 2 (Plovdiv) has been a challenge. It was difficult to recruit fieldworkers who were willing to commit to the program*. There were also some fieldworkers who were accepted by part of the community, but not by everyone. In some closed off communities, there can often be stigma around participating in a program, because the community is used to thinking that "programs" are targeted at the people living in poverty. So, enrolling in a "program" of any kind would mean that they would be seen as poor by other community members. Fieldworkers who are part of the community would also sometimes (mostly at the beginning of the implementation of the program) be seen as someone who could spread personal information about them to other members of the community. However, that was later overcome with the intensifying of the fieldwork. The fieldworkers in Plovdiv were also very useful in interpreting between Bulgarian and Turkish, so that NFP nurses could communicate with their clients.

Since the beginning of the pandemic, retention and recruitment of nurses in Plovdiv has also become a challenge. *"When we began the implementation in Plovdiv, the salaries that we could provide could be compared to the salaries in a private hospital**. However, now the salaries have been rising due to lack of medical personnel and our salaries aren't as competitive anymore***".*

One of the ideas within the implementation team is to recruit nurses and midwives who are frustrated by the current developments in the Bulgarian healthcare system but are still interested in working in the field of medicine and healthcare. They are not only experienced but could also prefer having a structured 8 hour workday, the ability to spend holidays with their families, the absence of nightshifts, and greater than minimum salary.

There has not been a problem with retention or turnover in Sofia. It is normal for some nurses to exit the program, go on maternity leave, etc. That means that sometimes new NFP nurses have to be trained and included in the field work teams. The implementation team has developed a capacity to both provide the trainings**** and disseminate them online if needed. However, the disposition

* Some of the people that are suitable for that kind of job should have a certain level of education and be able to speak both Bulgarian and the local Turkish dialect. They aren't many and there are many organizations, services and institutions that are interested in working with them.

** Private hospitals usually pay nurses and doctors higher salaries than the state or municipal owned hospitals.

*** NFP clinical leader 2022

**** The NFP clinical leader is a certified NFP trainer.

of the core team members is that the online trainings are not sufficient for the best performance, since there are some practical exercises and other face-to-face element of the trainings, which cannot be learned properly during the online sessions.

The implementation team has built capacity to train new nurses with internet resources and that has made the training more sustainable in the long term.

5.2.3 Partnership and advocacy

After the successful completion of the piloting phase and an outcome evaluation, NFP-Bulgaria's main advocacy goal is to achieve sustainability of the NFP program through local and national agencies and thus, address the needs for a better early childhood education and care, and maternal health for the most vulnerable communities.

As part of its advocacy and visibility aims, the implementation team had set up a National Advisory Board and Local Advisory Boards (for each site). The aims of the implementation team in regard to the National Advisory Boards was to present the NFP program and its goals to stakeholders on national level – Ministry of Health, Ministry of Social Policy and Labour, the World Health Organization in Bulgaria, medical experts from different agencies that work towards providing maternal and childhood healthcare, educational experts in ECEC and educational experts in higher education in the medical fields. Each subsequent National Advisory Board included a report on how the program was developing, and its results and adaptation, and then started a conversation on the needs of maternal and child healthcare services and the possibilities of implementing NFP on a national level. The National Boards were hosted by the Ministry of Health and were attended by deputy ministers and experts on national level. The Boards have been organized bi-annually.

The Local Advisory Boards were organized to inform the local stakeholders (municipalities, service providers, educational and medical experts as well as local communities) about the program and the services it provides. The idea was to create a local referral network that would enable the faster identification and enrolment of potential clients as well as better cooperation among services that the NFP clients could potentially use. The Local Advisory Boards were held every four months in Sofia and Plovdiv. The board members were informed about the program's progress and were provided with data on key performance indicators. That was usually used as an entry into a conversation about the problems that nurses encounter into referring their clients to social services with some complex cases of clients* being discussed.

The Nurse-Family Partnership in Bulgaria has also built long-lasting partnerships with reputable hospitals in both sites. In Sofia, the program operates in collaboration with SHOG** "Sheinovo", with the NFP fieldwork team being situated in an office on the premises of the hospital. In an earlier interview, the CEO of SHOG "Sheinovo" Rumen Velev, MD shared that the hospital has a great working relationship with the implementation team. According to him, both sides are interested in advocating towards better maternal healthcare services in Bulgaria.

* All cases were discussed keeping the anonymity of clients.

** Specialized Hospital in Obstetrics and Gynecology

In Plovdiv (Site 2) a cooperation has been established with UNMPH* "St. George". Compared to SHOG "Sheinovo" it is a bigger hospital, which means that there is less regular communication between the implementation team and the UNMPH "St. George". This, however, does not affect the quality of the partnership.

The program has also developed a stable relationship with the National Center for Public Health and Analysis under the Ministry of Health. An expert from the center has been involved in drafting a statement on the practical integration of the NFP in the national healthcare services.

One of the closest partners for the implementation team in Sofia (Site 1) is the "Health and Social Development" Foundation (HESED), which is very active in empowering minorities, working towards self-efficacy, and has established a presence within the community of Site 1. HESED has been working with the Fakulteta (site 1) community for the last 20 years. The organization has a good reputation among the community and provides different services like food for children (0 to 3 years old) in their centers in Fakulteta and Filipovtsi. It was contracted to provide psychological support and supervision to the NFP Site 1 team.

Since NFP began operating, the NFP nurses came across a wide-spread problem that their clients above the age of 18 encountered. If they were medically uninsured, they would have to pay for all of their check-ups which was a big out-of-the-pocket spending for their households. The NFP provides all its clients in need of medical check-ups, but as a step towards sustainability of the program, the implementation team wanted to provide their clients with a medical office within the community. The HESED center in Fakulteta had a space for a gynecological office but had none of the equipment, so in 2018 and 2019 the implementation team worked towards fundraising money for buying medical equipment for that office. The idea was to provide free consultation and medical check-ups for pregnant women, who do not have medical insurance. In 2019, the office was opened and according to an interview with a member of HESED**, they have been providing medical check-ups, but have currently stopped due to the COVID epidemic. The TSA team managed to fundraise more than USD 20 000 for the medical equipment.

In Plovdiv the NFP central team partners with the National Alliance for Volunteer Action (NAVA), which provides psychological support to the NFP Site 2 team. The partner NGO is also engaged in delivering key trainings for Plovdiv team. Additionally, NAVA operates the finances for client-related expenses – medicine, medical examination, health insurance, contraception, etc.

NFP – Bulgaria has also managed to develop a network of GPs and Gynecologists who work with community members to refer eligible clients to the NFP program. That network is working better in Plovdiv, with more referrals towards the NFP, but there are several medical professionals who are part of the Sofia network as well. A factor to consider in the higher rate of referrals in Plovdiv in comparison to Sofia might be that the average age for giving birth for the first time is lower in Plovdiv than in Sofia. The trend of women giving birth at an older age is present in both cities but is still lower in Plovdiv.

* University Multi-Profile Hospital

** Interview with the Vice-president of HESED, conducted in 2020.

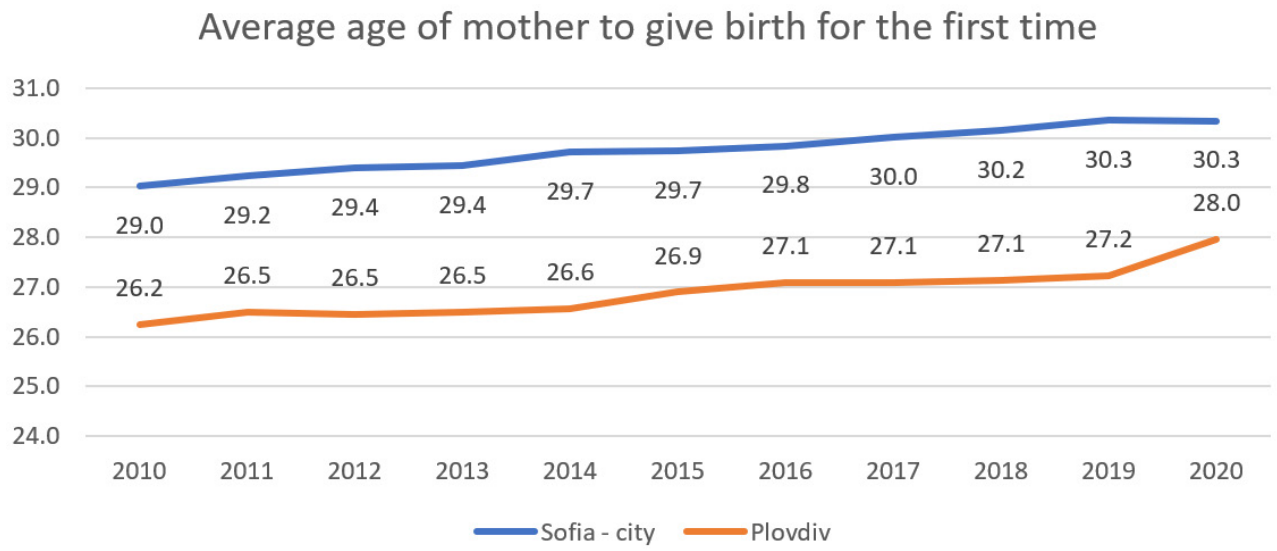
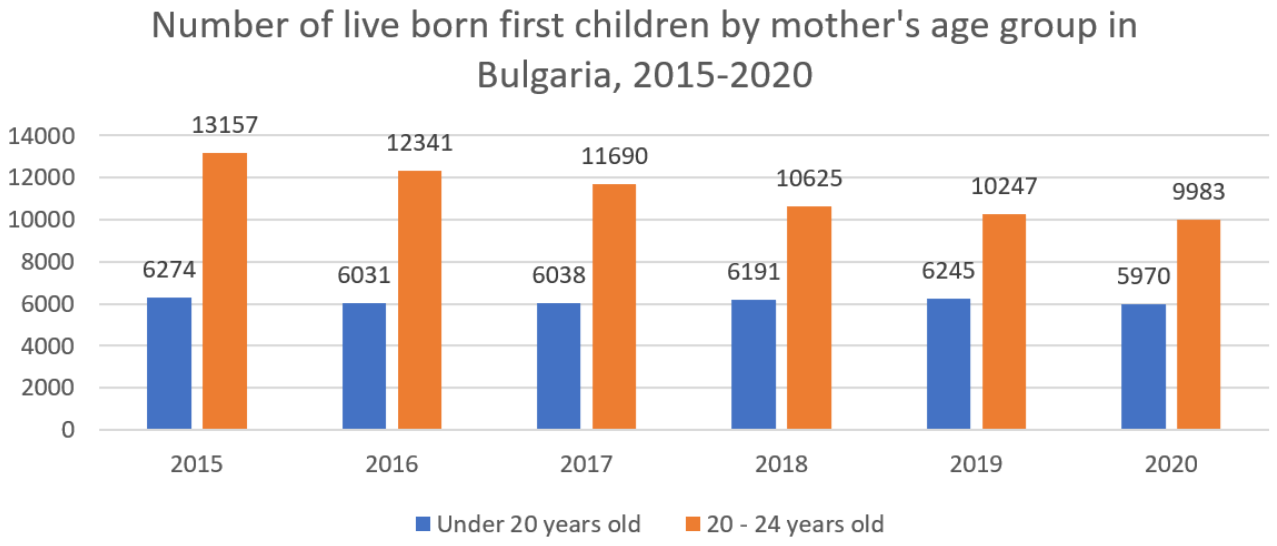


Figure 10. Data on average age of first-time mothers in Sofia (Site 1) and Plovdiv (site2)

Source: NSI

The proportion of births by age group of mothers has been steady between 2015 and 2019, but there is a decrease in the number of children being born in the three youngest age groups (15-19, 20-24, 25-29). This means that the pool of clients for the NFP program is shrinking in the country overall but is shrinking faster in different locations. This could mean that there are more potential clients in Plovdiv that could be referred to the NFP program, but that does not explain the higher rate of referrals in Plovdiv in comparison to Sofia. Hence, the research has concluded that the higher referral rate in Plovdiv could be due to the formal cooperation that the NFP program has had with GPs.



Source: NSI

Figure 11. Number of live born first children by mother's age group in Bulgaria, 2015-2020

The implementation team also advocated towards adopting the project of the "National Strategy for the Child" in its part concerning the mandatory patronage care for children. They also pointed out that there is a need for a more intensive program for vulnerable families. Further research of NFP with an experimental or a quasit-experimental study is going to be the most convincing way to illustrate and advocate for the place of the NFP program in the country's social and healthcare services for vulnerable communities. It could help to convince the Ministry of Health and/or Ministry of Labor and Social Policy that the NFP is an effective program to improve the well-being of vulnerable communities, with regard to the health status and long-term health and solidify better parenting skills.

In an attempt to increase the visibility of the program on a national level, and tackle a problem the nurses usually come across, in 2019 the central team initiated a national book donations campaign. As not many poor families own books and toys for their children and given the fact that toys and books are an important part of human development in the first 1000 days, the idea of the initiative called "Fairytale gift" was born to gather books and toys for the NFP client families. That initiative has since become annual (carried out around the Christmas holidays) and attracts attention from media and social networks alike.

In addition, the team started out another donation campaign. Since the start of the pandemic, the communities which NFP operates in had been hit hard – many were left without a job or the breadwinners of the family were forced to return to the country. Some families were affected more than others. The teams started a Global Giving campaign to provide families with food and other necessities.

5.2.4. Expected positive effects of the program

Table 4. Effectiveness indicators and sources of information according to the research methodology.

Expected positive effect of the program	Expected source of information about the expected effect of the program
Better maternal–child relationships and successful mothers' adjustment to their role as parents	Interviews from the mothers
In-depth interviews and focus groups with client'clients' household elders	Interviews with family nurses, mothers, and household elders
Improved parenting styles	Interviews with family nurses, mothers, and household elders
Improved home learning environment	Interviews with family nurses, mothers, and household elders
Reduced prenatal nicotine and alcohol use	TSA database
Reduced number of subsequent pregnancies by 24 months postpartum	TSA database
Reduced IPV during pregnancy and in the two years after birth among young high-risk women	No quantitative data could be gathered on this topic; qualitative data will not be a goal of the research, although some information on the topic may come out of the qualitative interviews with nurses or clients; OSI Baseline questionnaire, Other secondary data available
Lowered use of infant emergency healthcare	Interviews with from nurses and parents, and elders, and TSA database
Lowered rates of mothers' anxiety	TSA database; OSI-S Baseline questionnaire
Increased immunization rates	TSA database

5.2.4.1. Better healthcare outcomes and successful mothers' adjustment to their role as parents, improved parenting styles.

Measuring better maternal-child relationships and successful mother's adjustment to their role as a parent has been operationalized in the quantitative surveys by measuring the interest of the mother in topics that relate to improved health during pregnancy and interest in the topics that relate to taking care of a baby and/or a child. The NFP program has many instruments to measure the interactions between mothers and their children and to assess the domestic environment. The purpose of the survey was to measure the attitudes of women towards the importance of topics like health and taking care of a child.

During the surveying, NFP clients have shared that they felt a need to talk to their NFP nurses about pregnancy and taking care of their child. During qualitative interviews, some NFP clients (in Site 1, Sofia) had shared that talking to the NFP nurse is especially important for them during the pregnancy period, since they feel like they have more information on what they should and shouldn't do. Another aspect of that is that NFP nurses sometimes have conversation with the client's partner, mother and/or mother-in-law about the health and needs of women during pregnancy. That is useful in addressing violent behavior (if there are any indications of that), unhealthy domestic environment (smoking in the bedroom or living room) or addressing cultural myths surrounding pregnancy and the proper nutrition for women during that period.

According to interviews with NFP nurses, during the pregnancy stage of the NFP program, it is hard for them to go over many topics with their clients, because they seem to be thinking mostly about giving birth and the process of giving birth. One of the topics that they go over with their clients during the pregnancy stage is nutrition, how it affects the baby and the mother. However, nurses share that it is hard for them to address nutritional issues, since they are usually related to poverty. Despite that, the more experienced the nurses got, the more practical advice they could give to women on how to buy, cook and prepare vegetables, fruits and other food groups that they found their clients weren't consuming enough of. *"It is a balance between what is achievable given the domestic environment and the economic situation of the family and what is healthy to do."* Clients who found the advice given by their nurse not useful believed they already knew how they should take care of their health during pregnancy, because they received advice from their friends and family.

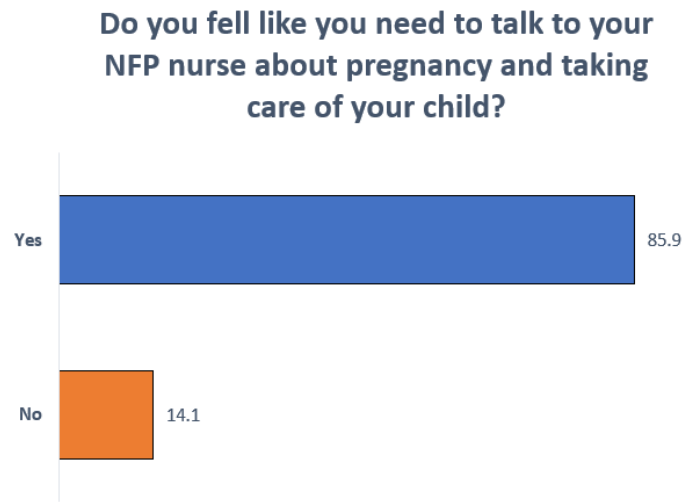
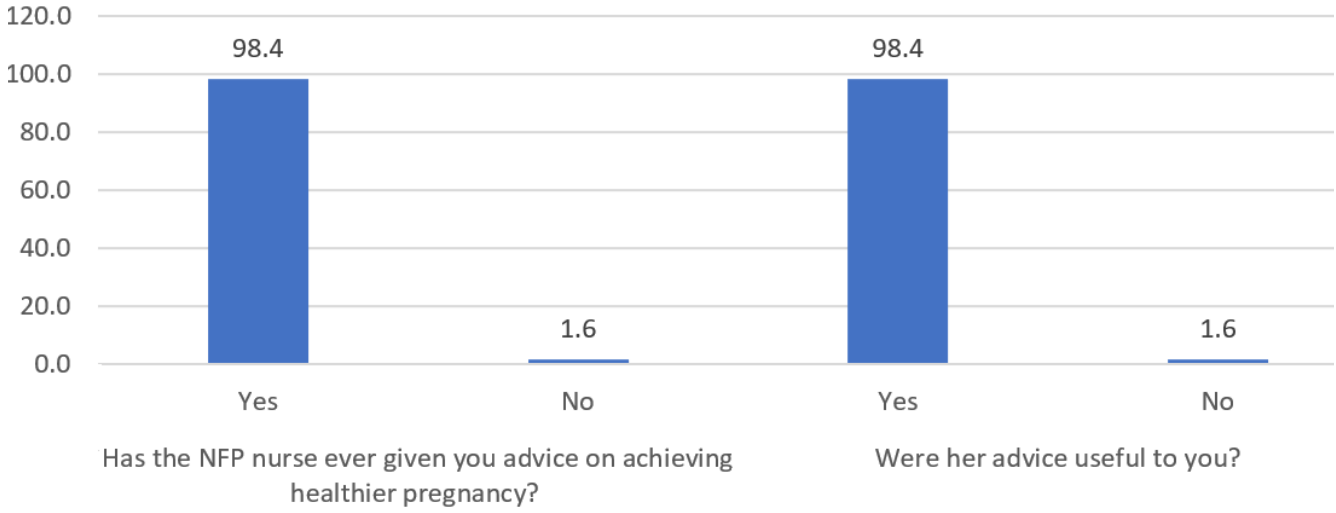


Figure 12. Distribution of answers of NFP clients for the NFP quantitative surveys based on three stages.

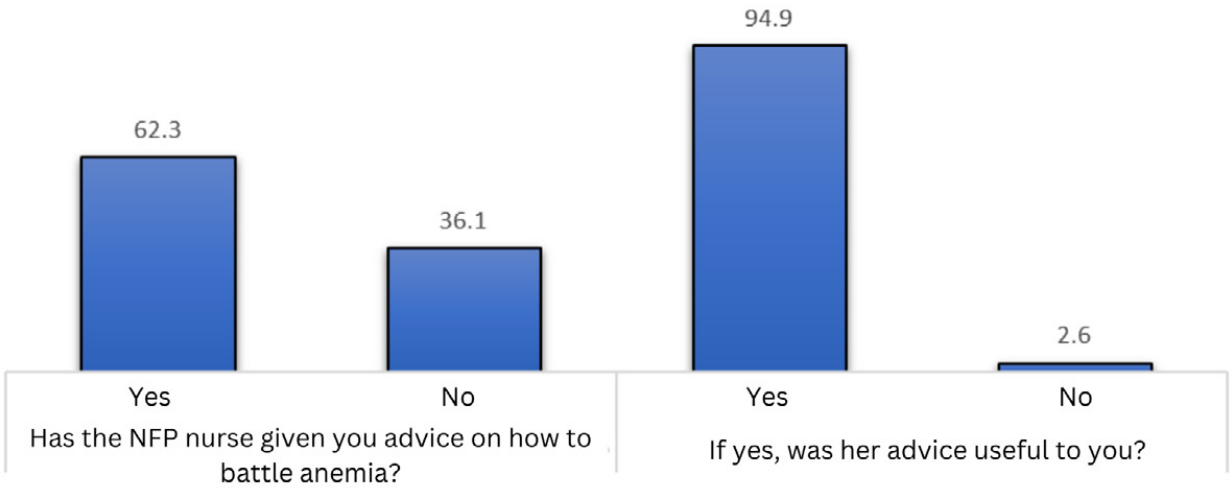
Figure 13. Distribution of answers of NFP clients for the NFP quantitative surveys based on three stages



Source: OSI- S KAP survey

Most of the clients have gotten advice on how to battle anemia during their pregnancy, but the topic is usually addressed only if the client displays some symptoms or if her blood test had shown that she has anemia. When a client has anemia, they are usually prescribed supplements and the NFP provides for them. This is especially important addition to the core elements of the program in Bulgaria. Many families might not be able to afford to buy supplements and even medication to address nutritional deficiencies, so providing them is important for NFP clients.

Figure 14. Distribution of answers of NFP clients for the NFP quantitative surveys based on three stages

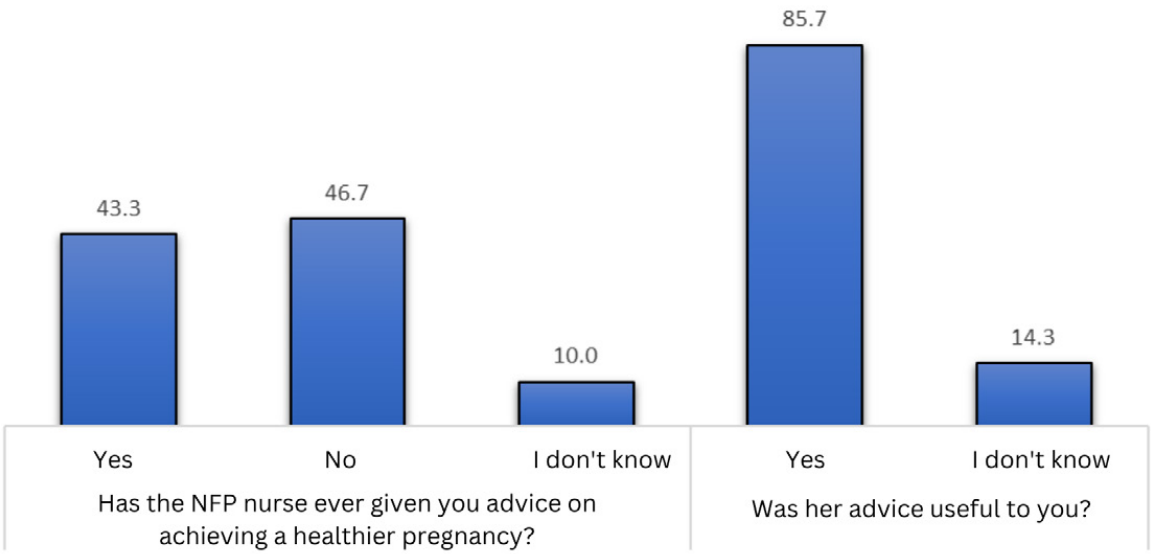


Source: OSI- S KAP survey

Almost 92% of the surveyed clients confirm that they have had a conversation about the changes their bodies go through during pregnancy, with 98,2% finding those conversations useful. Topics around stimulant consumption – coffee, alcohol, cigarettes and/or drugs were addressed with almost 92% of women in the program, with 95% of them finding them useful. The reason for some clients not finding the conversation useful was that they were not consuming any of those substances in the first place.

After the period of pregnancy, some women find that they need to have access to certain social services. However, many of them do not know what social services are available to them. That is another role that the NFP nurse fulfills. She is able to share with her clients the available social services and give them advice, logistical and any other type of support so that her client would be able to access them. According to the survey results, around 43% of the NFP clients have received advice on the availability of social services, with almost 86% of them finding the advice useful.

Figure 15. Distribution of answers of NFP clients for the NFP quantitative surveys based on three stages



Source: OSI- S KAP survey

In an interview with a representative of the National Center for Public Health and Analysis NFP was described as a program that not only improves the health indicators of pregnant women, mothers, parturient, newborns and young children, but also a program that leads to other positive changes: in the attitude towards one's own health, childbirth and upbringing, acceptance and evaluation of health care, building trust in health care. The representative also shared that one of the most important aspects of the NFP program was that its results were already scientifically tested around the world.

"Improving health is seen as part of a complete transformation of the life of parents and family, and respectively of the child (in social, economic, educational and other aspects)."

5.2.4.2. Improved home learning environment

Since encountering the several problems of poverty within families on different stages of the program – not being able to afford diapers (at stage 1), not having toys and books to show to their children (stage 2 and 3), in 2018, the implementation team decided to create two gift packages for families. The first package given after childbirth and contains diapers, hygienic materials, set of newborn clothes, towels, thermometer, a blanket and a toy. The second "gift" package contains a book, that is a gift for the child's first birthday.

Most of the interviews conducted by the research team were done in the houses of the clients. Many of them lack basic living conditions. Children do not usually have a place to play or a place to keep the child's clothes, books or toys. Usually, the infrastructure of the neighborhoods is in bad condition and children are allowed to go out and play only in the spring and summer. In March 2020, Fakulteta (Site 1) was put under quarantine due to a spike in COVID cases. Poor living conditions, lack of sewage and lack of clear water supply were the main contributing factors to that spike. Another underlying factor is that many of the people in Fakulteta work in jobs that do not allow for distance working and have to continue working in person.

In Plovdiv, according to interviews with nurses, children are not entertained or taught through toys and books. Most of the children are carried around, during work hours or social visits. *"They don't give them dolls, like we do. When I gave one of my clients the doll of a newborn baby, and it is a very realistic doll", she cried. She said, "It's so real! I want to hug it all day."* The nurses' approach consists of explaining to the families the importance of playing with their children and letting their children play, ask the mother to hang the colorful toy that comes as an NFP gift over the child's crib, so it can attract its attention and help in focusing its gaze or use an everyday object as a toy. Usually, mothers-in-law do not have a problem with toys being present around the baby, despite their traditional practice of raising children without toys.

5.2.4.3. Reduced nicotine and alcohol usage by mothers

According to data provided by the implementation team, 44% of clients in Site 1 smoked before their pregnancy. The percentage was gradually reduced to 38% at the late stages of pregnancy and once the women give birth, the same percentage of clients smoke again, on average (between 41 and 44%). Data from 2021 shows a lower percent of women smoking before pregnancy – 35%, which gradually decreases to 30% in the late stages of pregnancy.

That is mostly due to the enrollment of clients from site 2 (Plovdiv) who are traditionally non-smokers. In Stolipinovo, not many of the clients were smoking in the beginning of the program, so not many of them have to quit. According to TSA data, only 6 out of 78 clients were smokers before being pregnant. As aforementioned, the sites have different cultural understandings of families, traditions and values, so the smaller number of clients who smoke in Site 2 may have to do with that. The close supervision of mother and mother-in-law may have an impact. The effect of enrolling those clients drops the average rate of smokers but does not mean that there are less smokers in site 1.

Data in 2020 showed that even though not many clients quit smoking, on average, those who continue smoking decrease their intake three times during pregnancy and keep smoking on average the same amount after they give birth. This means that they have in the long term, on average, decreased their nicotine consumption. Data from 2021 solidifies that conclusion.

Data in 2021 shows that 4% of clients were using alcohol during pregnancy with an average of 1 drink per day. However, by the 36-gestation week, 0% of the NFP clients were using alcohol daily.

5.2.4.4. Reduced number of subsequent pregnancies by 24 months postpartum

According to data by the National Statistics Institute, the age specific birth rate coefficient in Sofia for women between ages of 10 and 24 is around 14 (between the years 2016 and 2018) or around 7, if the cutoff point is set at age 19. The official statistic has no data on pregnancies per woman in the specific age group, but the results of the program are around the average for Sofia – city for women aged 10 to 19.

Data by the implementation team shows that 33% of NFP graduates have had a subsequent pregnancy on average 14 months after the birth of their first child.

According to data from the quantitative survey with NFP clients, between 70 and 78% of women enrolled in the program know how many children they want to have. Those who knew how many kids they would like to have want an average of two children, with around 10% of women wanting three children. About the same percent of women share that they have talked to their partners about how many children they would like to have (around 70%) and most of them share that their partners would like to have an average of two children as well. There were only 4 registered cases of NFP clients wanting smaller number of children than their partner.

However, there are many macro specific factors that contribute to the choice of having another child. In Fakulteta (site 1), some of the NFP clients live with their husband's family, mostly due to economic reasons (poverty, lack of housing for the new family, possibility to share expenses and family members who can take care of the children when parents are working). This could sometimes result in pressuring the NFP clients to have a second child soon after the first one. Financial barriers and medical conditions are also contributing factors, since there is a requirement for an examination and treatment before using an IUD as a contraception method. In Stolipinovo (Site 2) contraception is not allowed or accepted by families at all. Traditionally NFP clients who are members of the Muslim community live with the mother and father-in-law and are exposed to pressure for a subsequent pregnancy soon after having their first child. This is especially true if the first child is a girl, since boys are perceived to be the successors of the family.

5.2.4.5. Reduced IPVduring pregnancy and in the two years after birth among young high-risk women

The Bulgarian authorities have not yet properly addressed the need for detailed data on IPV and GBV in the country and there are police registers only about some cases of domestic violence. Data from a nationally representative study the OSI-S carried out in 2018 shows that

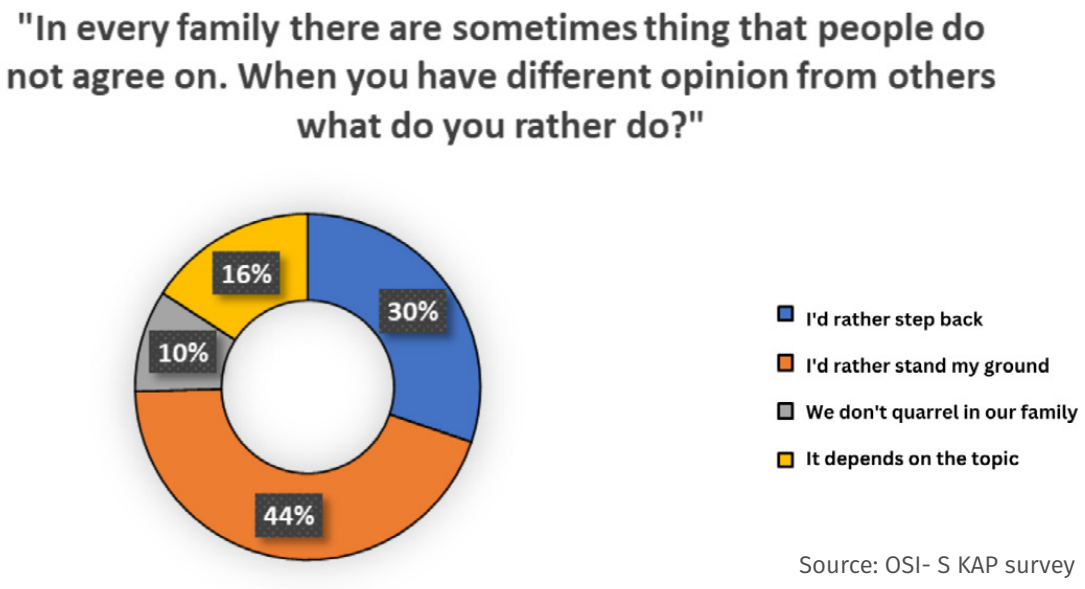
men are generally more accepting of both softer and harder forms of intimate partner violence. One of the examples being that around 12,3% of men found it acceptable to slap their spouse if they have been provoked and around 5% of women also found it acceptable. People with initial and primary education found that particular form of physical violence acceptable far more than any other group. For people with initial education, more than 28% found slapping acceptable and around 12% of people with primary education found it acceptable. According to data from the TSA, women experience more IPV on average after being pregnant, not during the pregnancy.

Given that most of the NFP clients live in households with primary or initial education they might be more at risk of experiencing IPV than other women. Data from 2016 to 2020 shows that 8% of NFP clients report experiencing IPV during pregnancy and the percentage goes up to 9% after giving birth. The reported IPV is lowest in the later stages of pregnancy – 4%. This might be attributed to lack of recognition of the violence and it is possible that the clients have internalized the violence as a "norm". There is a possibility that only very aggressive forms of violence are reported and recognized.

The second explanation is that women may generally be more careful not to trigger any violent reactions from their spouses during pregnancy, to preserve both themselves and the babies or the spouses are aware that they may harm the baby and abstain from violent behavior.

IPV is a problem that is very hard to tackle, since the victims are usually protecting the perpetrators and/or feel as if they have no choice but to stay together. One of the NFP nurses shared that she has clients who are forced to have a second child soon after the first one by their husbands, to trap her in the household even more. *"If they work, they cheat"* – one of the clients shared. *"That is what my husband tells me. "Why do you want to work? To cheat on me?"* The OSI-S questionnaire does not explicitly ask about experience with any form of violence, but it includes a question about family decision making when there is any form of disagreement.

Figure 16. Distribution of answers on the question "In every family there are sometimes thing that people do not agree on. When you have a different opinion from others what would you rather do?"



Source: OSI- S KAP survey

More women would rather stand their ground during an argument, than those would rather step back. The percentage of women who say that there is no misunderstanding or quarrels in the family usually means that they wouldn't want to talk about it or that they are very passive to most things that happen and feel like they don't have the agency to be a part of a discussion or form an opinion. During the surveys, usually there was a family member present when that answer was given. Women in Plovdiv (Site 2) are also more likely to step back, than those in Sofia (site 1). However, since there aren't enough paired three stage surveys in both Site 1 and Site 2 those results aren't conclusive on the effect of the program on the women's ability to stand up for themselves. Additionally, there are some cultural specifics in both sites that could contribute to that initial result. Traditionally in the Muslim community the daughter-in-law (the NFP client) is supposed to be obedient, respectful to the traditions of the particular family and do as she is told by her mother-in-law. If she fails to meet the criteria, she could be returned to her family and be considered a "disgrace" and a marginalized figure to the rest of the community. In addition, violence or quarrels are considered a very private family matter that is not supposed to be shared with outsiders. Within both the Roma and the Muslim communities there could also be a fear of discrimination from the authorities if they file a complaint.

5.2.4.6. Lowered hospitalization rates due to injury (including ingestion and burns)

There is no official public statistics on the number of children who are hospitalized or treated in emergency rooms for the country per annum. The TSA team reported three cases of children who were taken to the emergency rooms between 2016 and 2021.

The housing condition of NFP families is poor in most cases. Some of the clients live in informal dwellings, that might not meet the legislation requirements and construction criteria. Potentially that may result in dangerous fixes of electricity, plumbing, etc. Families usually live around the poverty line and lack necessities, so they are forced to make do with materials that they find or are gifted to them. There are sometimes electricity cables that are dangerously low or electricity plugs that have not been secured. There is also a risk of children getting burned in the winter and colder days of autumn and spring, since the heaters are usually very hot and are not in any way secured from children touching them and getting burned and are usually present in the room where the child is most of the time to keep them warm. NFP nurses talk to their clients about any domestic risks that they see and try to provide them with advice on how to reduce and eliminate them.

One of the NFP nurses in Plovdiv shares that there is an understanding among the older generations that the child should be jerked up and down when it is crying. The nurses give advice against it since it could lead to sudden infant death due to brain injury but changing the traditional care taking methods is not an easy task.

5.2.4.7. Lowered rates of maternal anxiety

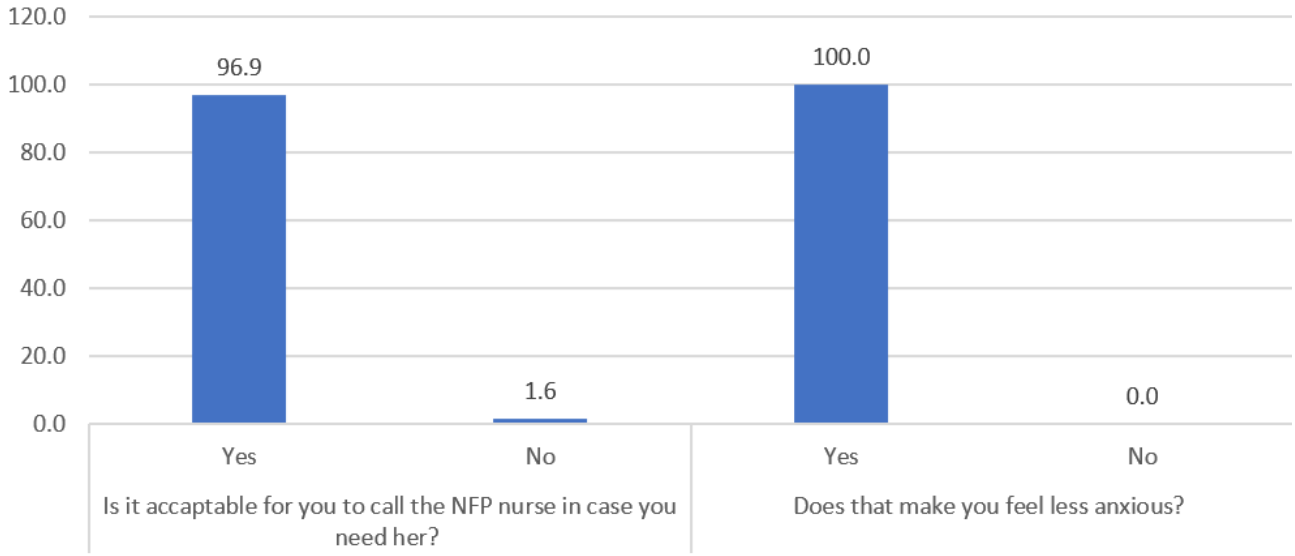
Data by the implementation team shows that most of the clients who are enrolled in the program experience some form of generalized anxiety disorder (GAD), most of them experiencing a milder form. Many women continue to experience the disorder up to 8 weeks after the child has been born.

Then, the data shows a significant drop in the number of women experiencing GAD at 12 months after birth and only two women experiencing severe forms of anxiety and two experiencing mild anxiety 18 months after birth.

"I miss her (the nurse) very much. Nobody cares about me here and I have no one to ask what is going on with my child. I got so used to her being here and helping out". Even after the interviews with clients ended, some of them wanted to stay and chat or consult with the NFP nurse. *"I feel safer with her"*, another client said.

Nurses report that during COVID the clients were calmer than initially expected since they had a medical professional that they could ask for advice. During the interviews and surveying of clients, they reported lack of anxiety due to the pandemic. However, some of them reported that they felt neglected in hospitals due to doctors being worried and overworked in the pandemic situation.

Figure 17. Distribution of answers on the questions "Is it acceptable for you to call the NFP nurse in case you need her? and "Does that make you feel less anxious"?



Source: OSI – S KAP survey

NFP clients find the conversations useful in 96% of cases. Being able to call the NFP nurse when they need to talk to her is acceptable to almost every NFP client and makes them feel less anxious in 100 % of cases. This effect may be contributed both to the trust built between NFP nurse and her client and their access to medical professional at time of need. During interviews, NFP clients share that being able to call the nurse, when their child has temperature or display any other symptom that could be worrying has been very comforting to them. Even if the nurse gives them advice to call their pediatrician and talk to them about the symptoms, the conversations that they have and their feeling of being cared for and understood has been highly appreciated.

5.2.4.8 Increased immunization rates:

The rate of immunization does not change much from Infancy to Toddler phase according to the TSA data. Around 56% of children have all their vaccinations on time at Infancy stage and that percentage increases to 65% at the Toddler stage. Between 3 and 4% were unaware of vaccination schedule at Infancy and Toddler stage. A pediatrician in Sofia shared: *"Children can't be vaccinated when they are sick. When some of the mothers come to me and ask for a vaccination and their child coughs, I cannot give them a vaccination. We reschedule, but generally, their children cough most of the year. Probably due to the heating in the neighborhood"**

Another arising problem with vaccination in Plovdiv is connected to the big migration waves from Stolipinovo, towards other parts of Europe. *"They move and they move the whole family. Most of them stay there and we don't know when they are going to come back, if ever."*** However, if the families do come back, the immunization calendar and mandatory vaccinations are different in different parts of Europe. This may cause more than one obstacle towards enrolling children in school/kindergarten.

This is not a problem for the NFP, since the program allows clients to be enrolled back into the program if they were abroad or missing from the site only for three months. In which case, it would be easier to catch up on a child's vaccination. However, if a child from the NFP program cannot have a vaccination due to a precondition, the child might be in a bigger risk of contracting a disease if many children have missed certain vaccination due to migration.

COVID–19 pandemic could have affected the scheduling of vaccinations and the parent's willingness to take their children to pediatricians or other medical specialists, however, there is no data gathered by the research or implementation team to test this hypothesis.

5.3. Efficiency

An analysis based on simulation, conducted in 2015, and data coming from the randomized controlled trials, shows that Nurse-Family Partnership should be considered as a policy investment, especially when it applied to high-risk mothers***. On the earlier stage of the analysis, the authors of the current report underlined the fact that the efficiency of the intervention cannot be properly measured, since there are ongoing adjustments of the program, but the process of adaptation and adjustment raises additionally both the financial costs and the expert time. Literature review on the cost differences between the randomized trials and full-scale replications shows that usually the replications have fewer home visits per family than trials and lower costs per visit, as well as a significant variation in cost-per-visit between the piloted NFP and the implemented NFP program, depending on the site of implementation****.

* Pediatrician – Sofia, interviewed in 2019.

** NFP nurse, who has been trained for stage "Pregnancy", Plovdiv, interviewed in 2020.

*** Wu J, Dean KS, Rosen Z, Muennig PA. The Cost-effectiveness Analysis of Nurse-Family Partnership in the United States. J Health Care Poor Underserved. 2017;28(4):1578-1597. doi: 10.1353/hpu.2017.0134. PMID: 29176115

**** Miller, T.R., Hendrie, D. Nurse Family Partnership: Comparing Costs per Family in Randomized Trials Versus Scale-Up. J Primary Prevent 36, 419–425 (2015). https://doi.org/10.1007/s10935-015-0406-3

In the initial feasibility and acceptability report, the Demonstration home visiting services [DHVS] of UNICEF was considered an important part of the efficiency assessment in Bulgaria. That was due to both home-visiting programs starting in 2016. The core elements of the intervention models of NFP and DHVS are listed in Table 5.

Table 5. Comparison between some core elements of the visiting nurse model piloted by UNICEF (DHVS model) and the NFP model

Core elements	DHVS model	NFP model
Philosophy of the model	Individual risk	Community factors
Approach of the implementation	Flexible	Structured
Adjustment approach	Builtd upon the existing structures	Introduces new elements (services, supplements, mediators)
Target population	Total population at risk	Vulnerable groups
Level of intervention	NUTS-3 regions	Focus on segregated neighborhoods, but includes other parts of the cities
Enrolment age criterion	All ages	Below age 22
Enrolment stage criterion	Childbirth	Pregnancy before 28 GW
Enrolment order criterion	Any birth	First births
Completion criterion	Toddler age 3	Toddler age 2
Focus of intervention	Parental skills Access to healthcare	Maternal role/sensitive childcare skills; Maternal and infant health; Maternal life course development.
Expected positive effects	Prevention of abandonment, violence and neglect; Lowered infant mortality Responsive parenthood	Increased knowledge and awareness about the access to services and safe environment; Lowering the levels of premature births and the number of children born with weight that is too low for the gest. week; Improved child development; Self-efficacy and economic; self-sufficiency of parents.
Patents, intellectual rights and license requirement	Free of charge, no license needed	License payment expected

The DHVS pilot program was suspended and evaluated and the main findings are available to the research team. Despite not being explicitly stated in the DHVS monitoring report, the DHVS model failed in its philosophy and coverage of the target population. It turned out that the interventions are not very acceptable for the middle and upper middle-class population and thus the vulnerable groups were over-represented in the program (which brings DHVS closer to the NFP target group, due to the self-selection of clients who participate in the DHVS). As shown in the table 6, the share of pregnant women enrolled decreased over the time that the DHVS model was implemented.

Table 6. Achievement of the initial benchmark for coverage of the benchmarks (as indicated in Annex 7*).

Criterion	Site	Baseline 2014	2017	Target 2018	Status	
Share of pregnant women covered (based on the births for the given year or estimated number of pregnancies)	Shumen	35%	29%	50%	Not likely	AAGR** (- 0.02%)
	Sliven	11%	14%	50%	Not likely	AAGR (0.01%)
Percent of pregnant women without health insurance	Shumen	50%	51%	25%	Achieved	Exceeded the target 2 times
	Sliven	8.6%	27.5%	25%	Achieved	Exceeded the target by 2.5%

The monitoring report of UNICEF also failed to provide statistically significant data on the efficiency of the model, since its' efficiency was measured by unclearly defined indicators. An example of that being: "Indicator: Resources were used in the most efficient manner" with options "Yes/partially/No". The methodology has not accounted for the social desirability and self-selection biases in giving answers. However, it was set in that manner due to a lack of accountability and proper track on spending decisions made by UNICEF. The monitoring team claimed that "the evaluation was unable to analyze whether the demonstration project outputs justified costs incurred due to the absence of required financial and quantitative data and limits its judgment to only qualitative data obtained. Although financial information is available, the system used by UNICEF restricts robust analysis by type of expenditure". The lower efficiency is attached to "absence of effective government" and need of door-to-door recruitment, which raises the cost. Well, for the NFP exactly the door-to-door approach seems to increase the effectiveness of the coverage and the efficiency of the project.

Therefore, an efficiency analysis based on the alternative model will be impossible and this report will focus only on the self-efficiency of the NFP project. The NFP has an internal clear procedure for the assessment of the "Cost per Beneficiary", which is based on the consideration about the three phases of NFP Program replication in Bulgaria:

1. Piloting and adaptation
2. RCT or another impact evaluation study based on quasi-experimental design.
3. National scaling up.

Based on the financial standards adopted by the Ministry of Finance for 2020 the cost per beneficiary for the state funded social services, (the cost per beneficiary for one year for the clients of the Community Centers for Children and Families) is BGN 3985, and at the same time the NFP

* Evaluation of the UNICEF Demonstration Home Visiting Services for Families with Young Children in Bulgaria in the period of 2013-2018

** AAGR – Annual Average Growth Rate shows the mean increase in the value of an individual investment on an annualized basis.

service costs BGN 2117 per beneficiary per year, which is about 53.1%. However, the approach is different from the approach of the DHVS. The state services for children (including the DHVS) are based on an individual approach, i.e., there are 3985 BGN per child. The NFP calculation is equalized not only simply to mother-child dyad, but includes the "partner", i.e., so it is a "nuclear family tryad". This makes sense for the NFP beneficiaries' definition but will not be calculated the same way by the Ministry of Social Policy and Labor. A more accurate calculation that might be applied by the MSPL if they were to calculate it would be 6351 BGN or 1.6 of the prices for the service that is closest to NFP. If we take in consideration all possible and related spending, including all research, training, equipment, database maintenance, transportation, and overhead, the total price rises to 2.5 of the national standard (BGN 9859.4 per child).

However, the new calculation of the current expenses by 2021 show that the price varies between BGN 2200 and 3400, if the training of the team and initial adjustment of the methodology is not considered in that price. The current calculations are subject to some haphazard factors and in order to be able to calculate the efficiency, service standards are needed (see recommendation 6.2.5.)

5.4. Impact

The final impact of the NFP program should only be assessed after the end of the project, and according to its internal NFP principle – after conducting an experimental or quasi-experimental study. Since it is a work in progress the research will not be able to measure any kind of long-term effects produced by the program interventions – neither directly or indirectly, intended or unintended. The *population in need*, *population at risk and needed population* that the NFP program impacts is as follows:

5.4.1. Population in need

The people who potentially could benefit from the program are considered to be "population in need". Since the initial age criteria were expanded to include women up to age 22, the pool of potential clients became deeper and is deep enough to ensure maximum capacity for the nurses in Site 1 and Site 2.

A Medical University of Varna professor suggested a further deepening of the pool with inclusion of clients up to 34-gestation week.* However, according to the NFP philosophy, being enrolled in the later stages of pregnancy might prevent the NFP program to positively impact the pregnancy and birth outcomes.

Plovdiv is one of the top three regions with highest birth rates among women younger than 20 years old. Out of 6,191 births in the country to mothers below the age of 20, 689 were in Plovdiv, which means that one in every ten women in that age group has given birth in Plovdiv. The implementation team has decided to open the program to any woman in the city, who might be willing to participate. Despite that, the clients are predominantly from segregated neighborhoods. However, the referral system in Plovdiv is working well and 23% of NFP referrals come from GPs, OBGYN or other institutions

* Interview MU – Varna, 2020

in Site 2. Incentives* for GPs and OBGYNs to work with the program and refer clients might have contributed to that. This design could be sustainable for a nationwide program if the government decides to stimulate enrollment rates in the beginning or create a register for pregnancies, that would eliminate the need for referrals.

It was also suggested** in an interview that the program could be implemented in other regions in the country. Sliven was pointed out as one of the most suitable regions due to several factors – highest birthrate in the country, one of the highest shares of population living in risk of poverty and social exclusion and a faculty of Medical University – Varna that could be a potential source of NFP nurses.

5.4.2. Population at risk

The population at risk is the group of clients who are currently enrolled in the NFP program. Their demographic characteristics – age, ethnic identification, religion (if any), household composition, domestic conditions of the household, education levels of the household and economic situation will be important when planning the impact evaluation.

5.4.3 Needed population

The needed population reflects the client pool needed for the proper further implementation of the project after the pilot phase, and according to the philosophy of NFP for the evaluation based on RCT. It includes two groups of population in need: *The first group* consists of the clients to be enrolled in the program, becoming population at risk and *the second group*, to serve as a comparison group in an eventual study. The potential population at risk is not hard to be defined based on the existing national statistics at municipality and settlement level, as well as based on a quantified screening procedure (used for the selection of Site 1 and Site 2 during the current piloting phase). The implementation team has created a list of potential sites and has more detailed research of the demographic in some of them. The two potential sites that have not been selected for Site 2, that have had the needed population were Stara Zagora and Varna. Stara Zagora is an unusual case since the population in need there is scattered around the city and is not entirely situated within its borders. Data from 2020 show that even telehealth done by NFP nurses is an effective way to meet clients.

As previously stated, around 6,200 women give birth below the age of 20 each year. In the age group between 20 and 24 women give birth to 10,625*** children. Given the dynamic of birth rates based on age groups of mothers, we can assume that women between ages of 20 and 22 gave birth to less than half of the babies in this age group, just to be conservative.

If presumed that women between ages of 20 and 22 give birth to ¼ of the babies (to reflect the previously described trend)that were given birth by mother age 20-24, this adds 2,656 babies

* While Site 2 was still establishing the implementation team signed contracts with MDs from Plovdiv who would get a small monetary incentive for referrals of clients to the program.

** MU – Varna professor interview

*** Based on data for 2018.

that are potentially eligible for participation in the NFP program.* This means that there are around 8,856 babies being born each year by women below the age of 22. Depending on the way the implementation team defines the eligibility criteria in terms of vulnerability and economic disadvantage, the potential pool of clients could shrink.

To open a new NFP site, the implementation team is looking for a potential pool of clients deep enough in cities and their rural areas in a radius of around 50 km around the city, to make the service economically justified. But data from the National Statistical Institute show that usually more women in this age group (below 22 years of age) give birth in rural areas than in urban areas, which means that they would be harder to track and harder to visit. Maybe potential clients could be farther than 50 km away from an urban area. This is a challenge any patronage care service will face.

5.5. Sustainability

5.5.1. Transfer of knowledge

The implementation team is working towards creating a "Handbook of opening new sites"** and have acquired expertise in conducting trainings for new nurses coming into the program. The ability to transfer knowledge for the needs of the program is one of the important topics in sustainability. The implementation team has also drafted a "Lessons learned" Report.

NFP mediators are one of the most important aspects of the NFP adaptation to the Bulgarian context. They have been essential to the success of the program in Sofia and Plovdiv. In Sofia NFP mediators were a connection between nurses and clients during the COVID-19 lockdown and were especially important for the most poor and vulnerable amongst the NFP clients, since they had no other way to communicate with the NFP nurses except for the NFP mediator's phone.

In Plovdiv mediators are not only a key to the communities, but also interpreters between clients and NFP nurses in some cases.

The NFP mediators receive training by the program, but a big part of their knowledge is gained in the field and through interactions with clients and institutions. It would be very useful to use that knowledge to help future mediators for the program – "A Handbook of NFP mediators" with fieldwork know-how and tips on different problems that have or might occur should be created. A handbook might also include information on the basic medical and social services that clients could access and some very basic legislative, first aid and institutional information.

The implementation team has taken a step toward including their mediators in the national network of mediators who work for the Municipalities. That was an important step, since the mediators will already be in the system and they would be able to have a broader view on the issues and topics that are interesting to their local communities.

* The calculations are made in number of babies eligible, since we do not know how many mothers gave birth to the amount of babies being born. Potentially, a woman can give birth 3 times in 4 years.

** A finalized version of that handbook will be available once there is a certainty on the social and welfare infrastructure that could potentially host the NFP in the future.

5.5.2. The need for human resources

Currently, the biggest challenge that the NFP program faces is the availability of nurses and midwives in the country. Data shows that the average age of nurses in the country is 53, but there is an increase in the number of students who are enrolled in university programs that teach nursing* and midwifery, and until June 2020 there was no legal way for nurses to work independently from medical doctors. Since then, nurses can have a practice independently from other medical professionals.

The situation with the COVID-19 pandemic is also quite dynamic, and it is hard to make any predictions on the effects that it would have on the State medical system, as one of the biggest employers of medical professionals, as well as the willingness of future students to enroll in medicine majors.

*"There are state requirements for medical universities' curriculum but there is plenty of room for interpretation on the actual content of the curriculum – there is no requirement for midwives to learn how to provide patronage care or how to work with vulnerable communities. If there is a requirement to include those subjects in the curriculum it would be better and there would be more prepared professionals for the program. It could also be included in the curriculum as an additional course that is not mandatory for everyone, and it could even include topics on how to work with women in risk and vulnerable women."***

The MU – Varna and MU – Sofia professors agree that there is a possibility to add a NFP centered module of training after the graduation of nurses and midwives. One of the suitable places for that kind of module would be at the "specialization phase" of their education. Midwives and nurses in the country are not motivated to participate in specialization practices, because they are so in demand that they do not need to have a specialization to be hired. That specialization would not be reflected in their salaries.***

According to calculations in Field report 2****, a nationwide NFP program implementation would need about 122 nurses/midwives to cover the needs of geographically clustered first-time mothers for those regions with a presumably big enough pool of low-income, first-time mothers under 22 years of age per cohort of clients.

That, however, is still quite a big demand for human resources given the lack of nurses in the country. A MU – Varna professor suggested that a fix for that may be an intense learning program for the already trained national healthcare mediators.

"They can't provide patronage care, of course, but could be used while we try and get out of this bottleneck. Healthcare mediators could be advisors on nutrition, smoking cessation and drinking, domestic violence prevention and even breastfeeding, which is also part of the NFP program. They are also part of preventative healthcare and mediators could be educated to do

* All the arguments presented here have been presented in the "Policy context" part of the report with data.

** Interview with a MU – Sofia professor, 2020

*** Interviews with professors from MU- Sofia and MU - Varna

**** Field report 2, p.50

that. There are examples of people without medical education who advise on breastfeeding so why shouldn't mediators be able to do that?"***

However, if the NFP is made available in 8 to 10 sites in the country, the need for human resources would be reduced and may require around 60 nurses. Those sites could be reduced to 8 or 6, depending on the way the NFP is chosen to be integrated within other medical or social services within those Municipalities.

The NFP is a more specialized program and seeks to employ only healthcare professionals, but it's also an integrated medical and *social* service. There are medical professionals in the education system that are not nurses or midwives but may have the potential to be sufficient experts for the NFP.

The Public Health faculty of Varna Medical University have already developed and adjusted training programs, tailored to both the UNICEF and NFP patronage care programs and the training of interested paraprofessionals could start at any moment. That would contribute greatly to the sustainability of the NFP program.

5.6. Fidelity outcomes

5.6.1. Low-income clients

The Nurse-Family Partnership in Bulgaria has 15 program core elements. This feasibility and acceptability study only focuses on 10 of them. As required by the UCD, *every client that enters the program must have a low-income*. The implementation team is working in segregated communities that are traditionally considered poor by the community outside the segregated neighborhoods (in Sofia), but the NFP in Plovdiv has been open to every woman who is pregnant/or has no previous live births below the age of 22 and who is under 28th gestation week. This decision was made to give an opportunity to the NFP team in Plovdiv to work to a fuller capacity. Despite that, there are no women that have enrolled in the NFP program who could not be considered vulnerable. Most of the participants are from two settlements – Sheker Mahala and Stolipinovo.

5.6.2. Every client is the responsibility of a particular nurse

Every client is currently assigned to only one nurse. Since one of the nurses in Plovdiv has left the team, her clients have been assigned to another nurse who is trying to create a relationship of trust. One of the previous nurse's clients has since dropped out, but in a personal conversation has said that she was just tired of the program and had nothing to do with the nurse herself.*** The situation is the same in Site 1 (Sofia) where clients have been assigned from one nurse to another if that was necessary.

* Breastfeeding consultants are accredited professionals by the National Breastfeeding committee and are volunteers.

** MU – Varna professor interview

*** Interview with team member of NFP in Plovdiv.

5.6.3 Every client must be visited during her pregnancy up until her child turns 2 years of age

Every client of the program has been visited. Regularity of the visits is mostly kept, with more than 70% of visits completed in Infancy and Toddler phase and above 100% in the Pregnancy phase. *"We go slow from the beginning. It is sometimes hard for the girls to get used to keeping a schedule for our meetings. They tend to forget when we were supposed to meet, and they don't even call. But eventually, they get used to calling us. But it's hard in the beginning"*.* A client shared *"I have to apologize to her (the nurse), because I didn't want to meet her in the beginning, I thought that this was a dread. But I miss her so much and I wish I hadn't missed our talks. But she forgives me because we love each other"**.*

All nurses and supervisors must complete their initial training required by the University of Colorado and have to do their work following as closely as possible the NFP model. All of the nurses have completed their trainings.

The nurses, while using their own knowledge and skills, have to apply the NFP program guide, taking into account the individual strengths and challenges for each family and distributing her time between the set program areas. The nurses have managed to distribute the time they spend on topics mostly within the set program areas.

Table 7: Time spent on each of the NFP set areas in Bulgaria compared to the NFP objective.

Area	Time spent on area in Bulgaria	NFP Objective:
Personal Health	52%	35-40%
Maternal Role	22%	23-25%
Environmental health	7%	5-10 %
Family and friends	8%	10-15%
Life course development	11%	10-15%

Source: TSA database, Annual Data Report 2021.

5.6.4 Every full-time nurse must work with no more than 20 clients at a time

No nurse is working with more than 20 clients at the time. Some of the nurses in Site 1 were working at close to full capacity since one of the NFP nurses quit working in the program.

5.6.5 Every full-time supervisor must provide supervision to not more than 8 nurses at a time.

Since there is no team with more than 8 nurses, no supervisor is providing supervision to more than 5 nurses at a time. The supervisors get their supervision from the clinical leader. Usually, the nurses do not feel tense or worried about supervision, they welcome it as a way to clear things

* NFP nurse, Plovdiv, 2020.

** NFP clients, who have completed the program in 2019, interview 2020.

up about what happened during the week and get some support. *"I also feel calmer, because if I have a problem, I can ask her (the supervisor) to come with me on a visit and then talk about the client's needs and my worries about them. It is really useful."**

The supervisor provides every nurse with reflective clinical supervision demonstrates putting theory to practice and helps the nurses' professional development, which has a crucial impact for the Family nurse. That includes individual clinical supervision, team meetings, fieldwork supervision.

The team in Plovdiv is working under the supervision of an experienced NFP nurse, who used to be part of the team in Sofia. Nurses are generally satisfied with the supervisions.

The implementation team has also added reflective supervision on working with the data informational system of the NFP program, which has helped better suit the system to the needs of the field teams.

Supervision is also provided to fieldworkers/healthcare mediators, who receive it once every two weeks. The bi-weekly supervision was requested by the healthcare mediators/fieldwork assistants. In order for the pilot program to work in the context of segregated communities in Bulgaria**, two additions to the core elements of the Nurse-Family Partnership program were made.

5.6.6. The inclusion of a health mediator in the home visiting team, who helps with the recruitment of clients and introduces the program to each client and their family and reinforces cultural safety for the community where the program is taking place

Mediators have had a crucial role for the acceptance of the program in their communities and in recruiting clients. *"I believed her, because she was with Z* (a health mediator in Sofia) and if it wasn't for her and her promises that the program will be good for me and the baby, I would have never believed anyone"***.* The mediators do most of the recruiting of clients in Sofia and Plovdiv.

Data from the qualitative survey**** show that mediators are contributing towards a more trustworthy image of the NFP program in the initial stages of implementing a new site. This is especially true in more closed-off communities, who have also had no previous experience with any kind of home-visiting programs.

Another important function for the mediators, especially in Plovdiv (Site 2) where clients primarily speak Turkish, is translating. Despite the fact that the translation helps the nurse and the client to understand each other, there is a certain downside to it as well. *"I do not feel connected to*

* Interview, NFP nurse – Sofia, 2020.

** There is a discourse on interactions with programs and institutions among segregated communities in Bulgaria. The discourse narrative is usually „They (the institutions) will get money to do things for us, but they will not do anything for us really. They are going to take the money and later, blame us for not wanting to integrate" (Municipal health mediator)

*** NFP client N3, graduated in the NFP program in the end of 2019, interviewed in 2020.

**** More detailed information can be found in Section 5.1 Relevance, p.34 and p.35 of the current report.

*those clients, and they do not feel connected to me. We do not speak much, because we know that the mediator has to translate it. And I wish I could talk to them in private. And in the same language. I feel like the language barrier creates a trust barrier as well"**

The situation in Sofia is different. Many of the clients speak more than basic Bulgarian and it is rare that the nurse would need a translator for her clients. They work with mediators on recruiting clients and the mediators are usually a guarantee in front of the community that what is being said is true and positive for the community and the woman herself.

5.6.7 Coverage of medical needs for clients in need, including medically uninsured clients, removing the financial barrier for following medical advice

The implementation team continues to provide the NFP clients with access to healthcare, trying to include as many institutions and public resources as possible to make sure that the knowledge of how the public system works is understood by the clients, and they won't fear trying to access it again**.

They provide the mothers and children with food supplements to lower the risk of anemia in children and better the outcomes of the pregnancy and the neonatal period of the child. The NFP also provides medications to its clients and their children if prescribed by a GP or a pediatrician. That is a very important aspect of the model since Bulgaria has one of the biggest shares of out-of-pocket spending on medications in the EU. The country does not have a system for reimbursing purchases of medication for children, posing a threat to personal and communal health, according to an interview with a pediatrician working with NFP clients.

*"I am prescribing an antibiotic to a child. It is a specific antibiotic for a specific problem, and I know that it is a little bit more expensive than a broad – spectrum antibiotic. What will happen usually is that the family is going to go to the pharmacy and get the cheaper one, because they are poor, 2 levs could mean a lot to them, or 5 for that matter. The community is poor, and everyone does that – what happens is that over time, they build a resistance – the whole community towards certain antibiotics and when they need one – I don't know how to treat them."****

There has been some primary advocacy towards this measure being implemented in the healthcare system and the government – elect has indicated that they would like to work towards making medication for children up to 18 years old free.

* NFP nurse, trained for stage "Infancy", working in Plovdiv, interviewed in 2020.

** This knowledge is also part of efforts towards helping NFP clients develop a better self-efficacy.

*** Pediatrician, Sofia, 2020.

6. Conclusions and recommendations

6.1. Conclusions

Table 8. Current assessment of the feasibility and acceptability of the adjusted core elements of the NFP program as implemented in Bulgaria by December 2021*

DAC criteria / Core Element	Feasibility					Acceptability
	Relevance	Effectiveness	Efficiency	Impact	Sustainability	
Good community and organizational planning	+	+	n.d	+	+	+
Intensive nurse learning	++	++	++	n.a.	+	+
Visit-by-visit guidelines	++	+	++	++	++	++
NFP data collection and reporting system	+	++	+	++	++	++
Standardized evaluation and reports	n.d.	n.d.	n.d.	n.d.	n.d.	++
Quality improving processes	+	+	n.d.	n.d.	+	++
Health mediators	++	+	+	++	++	++
Coverage of key medical needs for clients in extreme poverty	++	++	=	+	=	++

*Note: The scores to be read as follow: ++ feasible/acceptable, + rather feasible/acceptable, 0 neither-nor, - rather not feasible/acceptable, = not feasible/acceptable, n.a. – not applicable to this indicator; n.d. – no data at the current stage of the research

As framed in the theoretical chapter, the current assessment of the NFP in Bulgaria is based on the flexible understanding of the multi-component nature of the project and possible variability in both the levels of acceptability and feasibility of the pilot project. Therefore, the feasibility of every core element was evaluated through the DAC criteria for program development. The summary of the outcomes is presented on table 8. The score justification is as follows.

6.1.1. Good community and organizational planning

The community and organizational planning have been given an overall feasible evaluation. The research has raised the question of Fakulteta (site 1) being the first selected settlement in the country in Fieldwork report 1. Since then, the NFP has been opened to 8 more neighborhoods in Sofia, following the movement of clients from one neighborhood to others.

Since the start of Site 2 in Plovdiv, the implementation and fieldwork teams have been working towards creating a public and institutional environment for the program. The recent data* shared by the implementation team on the number of referrals by medical specialists and institutions in Plovdiv (23% of all referrals) are direct results from that effort.

Sofia and Plovdiv Municipalities are hosts for the Local Advisory Boards and the Ministry of Health has been a host for three recent National Advisory Board meetings. This shows the commitment of those institutions to hearing the stakeholders and NFP program team and is a necessary precondition into developing better communication with the Ministry of Health and both Municipalities. Deputy Ministers from the MLSP have also participated in the NAB sessions and expressed support for NFP's sustainability.

In terms of "effectiveness" the team has been very effective in allocating resources towards site 2 and has been very active in developing the institutional environment in Plovdiv. Despite the initial problems that any fieldwork faces, the team in Plovdiv seems to have found a more effective way of recruiting clients. They have been working with community members, who are close to the biggest communities in Stolipinovo, Sheker Mahala and in Plovdiv and have developed an incentive mechanism for referrals.

There is no data on efficiency, since there are no comparable programs to compare the efficiency of the teams with. An important note is that the team in Plovdiv has been working for three years and has had more trouble finding clients and sustaining them, compared to Sofia. However, the Plovdiv site has seen some improvement in the last year. This is a normal effect, since most programs, including NFP would need an initial period of 1-1.5 years to become familiar to the community and to create the network of stakeholders (including clients) who support the program. Stolipinovo is one of the settlements in the country affected by migration and is harder to work in overall, since the population there does not speak Bulgarian and the communication is not as unmediated as in the other settlements where the NFP is implemented. Many families have gone abroad in search of a better economic situation and have taken their extended family with them, resulting in a higher share of NFP clients dropping out due to migration in Plovdiv, compared to Sofia. Based on the qualitative research and quantitative data, the NFP program has contributed positively to the lives of mothers, their children, extended families and the broader communities included in site 1.

Sustainability has been given a positive evaluation since the NFP implementation and fieldwork teams have adapted to the COVID-19 restrictions with telehealth and other means and have managed to provide their clients with services during the pandemic.

The overall acceptability is positive – the communities in Sofia are used to the program and welcome it. Data on referrals of new clients by current or past clients show that very clearly. The program is acceptable to most of the members of the communities in Site 1 and Site 2.

* March 2021

6.1.2. Intensive nurse learning

The training of nurses are given a "feasible and acceptable" mark. The nurses look forward to the trainings and find them interesting. The training is highly relevant for the communities and the problems that the NFP nurses cope with every day.

"The program has all the qualities of services through home visits, as an effective form of care for pregnant women and young children in terms of achieving results in key areas of impact, such as pregnancy outcome, parenting skills, health and development of children in early childhood;

*It has been developed as a comprehensive evidence-based model (theoretical framework and research); has a regulated structure; provided by qualified specialists – nurses and midwives; the teams undergo special training under the program; standardized documentation is kept; collects and maintains a database of interventions and results, etc."**

The nurses feel that they can freely express their needs in terms of training and knowledge; the implementation team has provided them with the necessary trainings. The nurses in Plovdiv were required to learn basic Turkish in order to try communicating with their clients better.

The NFP team has also made efforts to make their training more sustainable and build up their capacity by having a team member train the nurses based on the NFP program requirements. This will enable better international and local knowledge transfer and will reduce the costs of the training.

It might be helpful for future NFP nurses to have a module to their training that is based around experience sharing with NFP nurses with a longer experience in the program, especially if the two teams work in different sites. Lessons learned should be shared between teams.

Despite telehealth not being one of the core model elements, it is a very important addition to the services that NFP nurses provide. Training in providing telehealth has been provided for NFP nurses but was not emphasized. Since the beginning of the pandemic, however, the international NFP community has written more detailed guidelines in providing telehealth.

6.1.3. Visit–by–visit guidelines

The visit–by–visit guidelines have been proven to work well for gathering information, helping the nurses reflect on the needs of their clients and manage the time they spend on different topics and areas important for the NFP.

*"I don't see the guidelines as something mandatory. I know there are good suggestions there, but if my client has had some issue that she wants to discuss or there is no one in the house and we could talk more freely, I would be glad to change the plan that we have had. It's important to hear them, their problems and their struggles."***

The struggles that the nurses initially had with filling in the online forms are now gone. They are used to it as part of the job, and they have found ways to incorporate this responsibility into their daily job routines.

* Interview with a member of the National Center for Public Health and Analyses.

** NFP nurse trained in stage "Infancy" working in Plovdiv, interviewed in 2020.

The materials that the nurses use in their visits are highly valued by both the nurses and the clients*. For some of the low-literacy clients the nurses use the materials as an entry to a conversation, given their colorful pictures. Other clients share that they re-read the materials between the nurse home visits. A group of clients also use the NFP materials to entertain their children and read to them in Bulgarian, since some of the children only speak Roma within their communities and their parents are making an effort towards socializing them in Bulgarian.

6.1.4. The NFP data collection and report system

The research team has evaluated the data collection and report system of the implementation team as feasible and acceptable. As mentioned above, the nurses now accept data collection as part of their job and do not object to the need of data for the program. The data collection system also contributes to quality assurance. The data analysis has also helped the nurses identify important topics to discuss with families.

The data collection system corresponds to the needs of the data analysis and reporting for the program. The system allows for fast and precise data processing. The research team has received the necessary data on time and in the needed technical format. There are no data on efficiency, since no information is available on the cost of the system and since the system was created to suit the needs of this specific program, it is hard to assess what an alternative cost might be.

However, it is important to note that the field teams' feedback on the system has been taken into account by the implementation team. The implementation team has also implemented reflective supervision for the field teams on their interactions, impressions and experiences with the information system which has helped making more informed changes to the system when necessary.

Introducing tablets in response to the COVID-19 crisis has had another positive impact. Nurses can input the information from the visitation protocols just once, instantly while conducting the visit online. That has helped shorten the data input time and eliminate the "congestion" of documents that the nurses have previously shared that they experience.**

6.1.5. NFP mediators

NFP health mediators have proven to be one of the most essential components of the NFP in Bulgaria. Their work is very important both for the communities in the NFP and the NFP program teams. They have proven to be the key to a community and their work is a basis for success in recruiting new clients for sites where the program has not yet become part of the normal life for the community. The mediators in Sofia have been proven to work actively in talking about the program, recruiting clients and helping address any miscommunications between the NFP program, the community and the research team.

Plovdiv started with two mediators who have both been replaced as original mediators left.

* More quantitative data on materials and client's evaluation of materials can be found in section 5.2 "Effectiveness", 5.2.1. "Program materials", p.38

** In 2017 and 2018 nurses have shared that they put off the input of data into the system, since it was somewhat unfamiliar and tough for them. That has caused a "congestion" of documents in the office, waiting for an input.

Their relevance and impact on the program are significant in one more way – they also translate when needed and this makes working with those clients possible for the nurses. They also mediate between the community and the program and give legitimacy to the values of the program, when needed. The research has given a "feasible and acceptable" evaluation of their efficiency, since data from the quantitative survey suggest their efficiency in recruiting clients.

The work of mediators in both Sofia and Plovdiv has also been instrumental during the COVID-19 pandemic, often bridging clients without access to phone or internet to their NFP nurses.

Another step towards sustainability of the NFP program would be for the Municipalities of Sofia* and Plovdiv to hire the current NFP mediators. This would lower the cost of k, the NFP program, and create a foundation for a national scale–up from those municipalities. While mediators hired by the Municipality might have additional tasks and objectives in their everyday work, being able to work with a bigger share of the population in the communities that the mediators are currently working in could have a positive overall effect on the enrollment rate by building trust in the community in an ongoing way. The implementation team has tried to include their mediators in the national network of mediators who work for the Municipalities. That was an important step, since the mediators will already be in the system, and they would be able to have a broader view on the issues and topics that are interesting to their local communities.

6.1.6. Coverage of medical needs for the clients in need

The coverage of medical cost for clients has been a very relevant element of the program. The communities which the NFP program targets are on average economically disadvantaged, have low access to quality education and suffer many health risks due to poverty. Those communities are disproportionately affected by anemia and respiratory problems among other problems that they face. NFP provides medical check-ups for pregnant women, and supplements and medications when needed, which is relevant not only to the clients personally. It is relevant to a community which has to choose between a more expensive medication targeting a specific problem and a cheaper one, that is widely applicable for inflammation.

Despite this, providing medication and supplements is still currently not considered sustainable, because the Bulgarian healthcare system does not provide any monetary help for children or pregnant women. Data from the quantitative survey suggests that the main reasons for enrolment in the program is that the clients thought that the program was going to benefit them** (87,2%) and that they though that they are going to get advice on their pregnancy (31,9%)***. Only one client has stated that they have enrolled in the program, because they wanted to benefit from the free medication and/or nutrition supplements.****

* Healthcare mediators in Sofia have been hired by Sofia Municipality. This is currently not the case in Plovdiv.

** This is the most generalized answer to the question "Why did you decide to enroll in the program"? This result is probably due to the fact that the NFP program is very comprehensive and people who are unfamiliar with the program might not remember most elements of the program that might have been described to them in the beginning.

*** The question could be answered with more than one option, if applicable. That means that 31,9% of the clients of the NFP program had pointed out that reason as one of their reasons to enroll in the program.

**** However, it should be noted that it is a rule in sociology that people rarely give answers that are not socially acceptable or could portray them in a negative way in their own cultural or social interpretations.

There is no data on the topic that is available later on in terms of use of medications in the Roma community in Bulgaria, but interviews with GPs suggest that there is still a problem with using wide spectrum antibiotics, instead of a specific antibiotic prescribed by their family medicine doctor.

Depending on the specific medication and/or supplement needs of clients that the NFP provides, the percentage of clients who would need that kind of support may vary. It is highly likely that the percentages in the NFP population are higher, since the clients are women who are in a stage of their life where most women are in need of some supplements (pre and post pregnancy).*

The latest political developments point to a higher probability for introduction of a state policy on free prescription drugs for young children.

6.1.7 Stakeholder Overview of Opinions

The opinions expressed in this part of the report belong to members of the stakeholder groups who have allocated time and efforts to talk to the research team. Those members of the stakeholder groups are valued members of their own professional communities and their opinions are relevant to the Nurse-Family Partnership program evaluation. However, their opinions should be considered as personal opinions and not as statements made on the behalf of the entire stakeholder group they represent. Opinions may vary within professional community and stakeholder groups.

Ministry of Health of Bulgaria and Ministry of Labor and Social Policy

The political situation in the country has been unstable, with three parliamentary elections held in the last year (2021), and policy interventions by two regular and two caretaker governments in a same year. However, any future Bulgarian government should be guided by the strategic documents drafted by the previous government. All national strategic documents are aligned with the EU's strategies in the health and social care sectors. Measures in those strategic documents are funded by the national budget and by EU Structural Funds. This means that any future government should be able to get funding for measures in the health care sector and social services sector for the measures in the strategic documents.

ECEC services are part of strategic documents by the Ministry of Health and by the Ministry of Labor and Social Policy. There is a nation-wide NGO led push towards adopting a strategy for early childhood education and care; those efforts could result in a National Strategy for ECEC that reflects the best practices and implements services that have proven to have a positive effect on children and their families.

However, members of the Ministry of Health in the last government have argued that a service like NFP should be available to every woman in the country and should not be targeted towards any particular group of women. There have been discussions on whether every woman needs a service as complex and long-term as NFP or whether there should be different service-packages available for women with different levels of vulnerability.

* Based on availability of information from the implementation agency's data base, the research team can make a generalized calculation on the percent of people in the general population that could be in need of medications and/or supplements in case of a national scale up of the NFP program.

Hospitals

The NFP program is acceptable and feasible to the SHOG* and UNMPH** Hospitals. The program has collaborated with two hospitals in the country and has had very stable relationships with hospital administrative staff. The hospitals provide medical care for the NFP clients if and when needed or chosen by clients. According to the hospital), most of the time, they provide medical consultancy and administrative help to the program. Home-visiting services are very valuable for women according to the hospitals but based on their experience and communication with the Ministry of Health, it is very hard to get the medical staff needed to provide home-visiting services for pregnant women and young children. This often results in overworking midwives in hospitals. Home-visiting services provided by the NFP are the perfect example of how and why home-visiting nurses and midwives should have a separate medical profession – they care for families in their homes, assessing the health risks for children in their home environment and providing support to the parents. The program itself is very useful in training nurses to provide patronage care, but the need for paying a license for the program*** is a downside of the NFP. Another perceived downside is the lack of enough medical professionals to implement NFP as a national program.

GPs and pediatricians

GPs and pediatricians have found the NFP program to be very useful. They have shared that patients with lower socio-economic profile usually suffer lack of proper nutrition during and after pregnancy and their newborns often suffer from respiratory diseases and anemia. Providing supplements and medication if and when prescribed by a GP or pediatrician to the NFP clients has been found very valuable. Providing the exact medication or supplement that has been prescribed is very important, since most of the clients of the program would usually buy a cheaper alternative to the medication. This is very dangerous, according to GPs, since buying and using a wide-range antibiotic could result in an immune resistance towards future use of antibiotics.

Gynecologists

Providing prenatal care is very important to gynecologists and is one of the most important parts of the NFP program. Providing advice and support for women who are medically uninsured is important, since most of the problems come from lack of monitoring the pregnancies of women. The program is also important for younger women, who are medically insured, but lack the information on how and when they should go for check-ups and what kind of ambulatory services they should be provided with. NFP nurses provide advice and information on the topic and sometimes accompany their clients for check-ups.

* Specialized Hospital in Obstetrics and Gynecology

** University Multi – Profile Hospital

*** However, cost of license may vary depending on the scale of the program's implementation on a national level.

Medical Universities

Medical Universities in the country support the implementation of the NFP program. Their main concern is whether the program would be able to find and employ enough nurses and midwives for a national scale-up. The universities have different approaches towards finding a solution to this problem. Some have suggested creating a special elective course for patronage care in vulnerable communities for each nurse and midwife during their university education. Others have suggested creating a specialization program for the graduates that focuses on providing patronage care for vulnerable communities. Lack of proper payment in the sector has driven students away from the profession of nursing and midwifery * and the only long-term solution towards creating more medical professionals is national increase in the salaries of medical professionals. A short-term solution for finding more professionals to employ in the NFP program, suggested by medical universities, is to employ social workers and other medical professionals in the NFP program and train them to provide the service. However, given the original model of the program that solution is not acceptable.

NGO healthcare providers

There is a wide consensus in the NGO healthcare providers' community on the importance of early childhood education and care. Many sporadic projects and initiatives have been taken up by the sector on the ECEC topic in the last years but none of them has been turned into a sustainable model for ECEC. The sector supports the NFP programs' efforts and advocacy towards providing pre and postnatal care for first-time mothers and children up to the age of two. However, some NGOs would like to see a program that supports all vulnerable mothers and children. According to NGO healthcare providers, women in vulnerable communities are still vulnerable after graduating the NFP program and are in need of continuous support. The implementation teams' efforts towards providing the medical equipment for a clinic where uninsured NFP clients could have gynecological check-ups are highly valued by the NGO healthcare provider community.

Roma Health mediators

The municipal health mediators in Sofia (site 1) working in Fakulteta and Filipovtsi (where most of the NFP clients live) have been involved in the NFP program since the beginning. A member of the Municipal health mediator team, employed by the Municipality has been present in almost every Local Consultancy Committee and members of the Municipal mediators' team have at some point been employed in the program as well. That has helped site 1, since the communities already knew and trusted the mediators. The mediators themselves think that the NFP program provides far bigger benefits for its' clients than the work of the Municipal mediators. Mediators in Sofia (site 1) like their work and find it demanding but rewarding.

In Plovdiv (site 2) a similar approach was implemented in the beginning. However, it was not working for the program since some of the mediators had too many additional obligations that couldn't be combined with them working on the NFP program. Another factor for changing the initial strategy of recruitment of mediators in Plovdiv was due to the language barrier between clients

* According to interviews with members of medical universities in Sofia and Varna.

and nurses. The mediators in Plovdiv had to be present to translate most of the nurse home visits, making their jobs more difficult and time consuming than those of the Sofia mediators. After the initial turnover of mediators, the current mediators in Plovdiv are very effective and find the NFP feasible and acceptable to local communities.

Nurses and midwives

Nurse teams are the heart of the fieldwork teams – their everyday jobs vary between online and in-person visits, dealing with relatives, dealing with language barriers or cultural differences. Nurses like, accept and understand the NFP program in depth, but since they see the clash between theory and practice in their everyday work, it is sometimes hard for them to apply certain parts of the theory they learn to its' full extent. Some of them have shared that talking about nutrition in depth and trying to convince someone who lives in tremendous deprivation that fish is healthy is irrelevant, since some of their clients live in extreme poverty and sometimes hunger. They have shared that despite that, they do have conversations on nutrition, but sometimes feel the emotional toll of working with clients living in deprivation.

They recognize the need for the NFP program and have shared that seeing how their past clients take care of themselves during a second pregnancy has given them hope that what their clients have learned during their first pregnancy would stay with them for life.

The nurses enjoy the trainings and find them important. They like to learn and develop new skills and knowledge.

Clients

The opinions of clients vary significantly. Almost all the clients from site 1 find the program acceptable and feasible. However, they do see the need to meet with the nurse at a particular time and day demanding. Some of the clients do not respond well to the scheduling, even though they have themselves said that the time and day are acceptable.

Despite that, clients find the advice that NFP nurses give very valuable, they like being able to talk to someone outside of their immediate family and friends about what they are going through. They share that having someone weigh their baby and talk to them about how their visit to the pediatrician went is very calming. Being able to get the supplements and medication that they need is very important for the most vulnerable clients.

In Plovdiv (Site 2) most of the clients share that they were reluctant to participate, since most of them thought that whenever people came into their homes, it would be to take their babies away. It was helpful that most of them knew and believed the mediators in the program, so they decided to try it. Most of the mothers-in-law are present during the visits to help translate between nurses and clients. The mothers-in-law share that they think the NFP is useful for the younger women, since nurses give up-to-date medical advice and most of the mothers-in-law lack the time to have all the conversations that nurses have with their clients. Some of the clients in Plovdiv find the visit too demanding since the program continues after the birth. However, they feel calmer and more confident in their roles as mothers after talking to their NFP nurse.

6.2 Recommendations

6.2.1. Community and organizational planning

There is a need to work with the Stolipinovo community in terms of their cultural understanding of the need to breastfeed and to provide children with toys and books. Including local authority figures in the conversation could be helpful. There should be an awareness of the cultural sensitivities of the community in Stolipinovo.

During the research team's interviews and surveying former clients of the NFP approached the NFP nurses and wanted to talk to them and communicate with them more often. They wanted to share many of the things that had happened to them and their families. They still felt that they needed advice; some of them were pregnant with a second baby and wanted to have the NFP nurse around for that time as well. There may be a need to address the clients' feelings. One of the forms could be a gathering once a year, once the COVID-19 pandemic is over.

6.2.2. Intensive nurse learning

The research team has no recommendations in regard to the sustainability of the nurse's learning and knowledge transfer, since the implementation team has created a strong and sustainable model for knowledge transfer, despite the turnover experienced by the program in the last year.

There is a bottom-up recommendation however, on the need for a peer training in the curricula. The suggestion is for the experienced nurses to share their experience with on-site-specifics in Stolipinovo and Fakulteta.

6.2.3. NFP data collection and reporting system

Many steps have been taken to improve and enrich the NFP data collection and reporting system. Nurses have gathered information on the income levels of families and that step is very important with regards to the future experimental or quasi-experimental study on the program. It is important for the program to have the latest data available, so input of the data should be regular.

6.2.4. NFP health mediators

The current health mediators and fieldwork assistants are very much community bound in both NFP sites. They need a series of capacity building trainings in order to be able to work with different communities in Sofia, and in order to overcome their own prejudices towards the macro-society (i.e. suffer of "being native" effect). Some participatory experiences of the mediators should be encouraged.

In order to make the training of new mediators better and more field-work oriented, the research team suggests the creation of a "Handbook of the Mediator" with issues and what solutions were found, things to have in mind, tips in working with vulnerable communities, things to consider ets..

That will create a knowledge bank not only for their formal training but will empower them to create knowledge from experience.

6.2.5. Clear and transparent financial standard is needed

Last but not least, the most important for the acceptance of the NFP will be the establishment of clear and transparent financial standard of the service. The OSI-S team was provided both by preliminary extended and final simplified accounts for the project expenses. However, the current assessments are based on real spending but the real spending depends on haphazard obstacles (number uninsured, need of medical treatment for acute condition, etc.). The TSA should be able to provide minimal and maximal cost (due to minimal and optimal standard of service) per site in order to convince the public stakeholders in the efficiency of NFP. An example is presented at the table below.

The budget should be forecastable. Therefore, it is not good to be bind to the USD but to some reasonably fixed lumpsum in BGN, which could be updated annually due to inflation or exchange rate fluctuation.

Table. 9 An example of assessment table needed in order to set up a minimal and optimal standard for expected expenses

	1 site		**2 site**	**3 site**	**8-site**
	Maximum [clients (125), maximum nurses (5)]	Minimum clients (?) Minimum nurses (?)			Maximum clients (1000), maximum nurses (40)
License lump sum and 6 hours consultation	13 000				33 000
Crude annual expense on nurse salary	145 000				1 160 000
Other staff					
Health insurance of uninsured (expected proportion 1/3)					
Contraception (expected proportion 1/2)					
Child nutrition	22500				
Child medication					
Database maintenance	8 000	8 000			8 000
Commuting to site	6 000	1 825			
Utilities	10 000	10 000			
Training of nurses	60 000				

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Appendix 1. Qualitative sample frame matrix of stakeholders (2018)

General baseline and Site 1 +Site 2			
Stakeholder	**Data gathering method**	**Sample size**	**Completed by 2022**
Central team	Semi-structured interview	5	10
Local teams	Semi-structured interview	8	11
Nurses	Semi-structured interview	28	17
Clients' household elders	Focus group	1	0
Ministry of health and Ministry of Labor and Social Policy	Semi-structured interview	1	2
OG Hospitals	Semi-structured interview	6	1
GPs and pediatricians	Semi-structured interview	4	1
Gynecologists	Semi-structured interview	4	0
Roma health mediators	Semi-structured interview	10	(6)
Roma community leaders	Semi-structured interview or Focus group	4 (1)	0
NGO healthcare providers	Semi-structured interview	4	3
Medical universities	Semi-structured interview	4	2
Clients	Semi-structured interview	24	20
Social Service providers of National level	Semi-structured interview	0	1

Appendix 2.2. Number of nurses per region (NUTS-2) and province (NUTS-3) in Bulgaria for the period 2010-2018

Nurses	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	**31786**	**31609**	**32059**	**32455**	**31917**	**31397**	**30976**	**30955**	**30589**
North-West	**3853**	**3689**	**3665**	**3654**	**3637**	**3554**	**3512**	**3487**	**3395**
Vidin	325	311	310	307	309	262	269	241	232
Vratza	921	847	882	881	876	887	817	810	725
Lovetch	644	588	595	565	550	534	521	489	485
Montana	537	523	483	501	490	476	514	526	533
Pleven	1426	1420	1395	1400	1412	1395	1391	1421	1420
Notrh-Central	**3367**	**3352**	**3291**	**3278**	**3273**	**3225**	**3119**	**3014**	**2987**
Veliko Tarnovo	1063	1055	1004	981	976	976	936	900	896
Gabrovo	556	581	574	567	592	577	546	511	498
Razgrad	414	424	396	417	409	372	343	334	327
Ruse	933	886	895	902	884	893	890	872	883
Silistra	401	406	422	411	412	407	404	397	383
North-East	**3838**	**3779**	**3664**	**3681**	**3600**	**3573**	**3535**	**3471**	**3446**
Varna	1904	1918	1858	1893	1801	1888	1854	1858	1837
Dobrich	657	634	623	569	605	546	537	514	517
Targovishte	486	476	487	509	492	444	445	422	422
Shumen	791	751	696	710	702	695	699	677	670
South-East	4269	4236	4238	4341	4430	4303	4202	4126	4054
Burgas	1330	1370	1455	1510	1612	1542	1564	1525	1484
Sliven	687	664	657	660	656	672	670	662	666
Stara Zagora	1747	1694	1635	1682	1690	1640	1528	1512	1510
Yambol	505	508	491	489	472	449	440	427	394
South-West	**8945**	**8952**	**9646**	**9927**	**9552**	**9403**	**9248**	**9460**	**9294**
Blagoevgrad	1189	1186	1157	1153	1133	1193	1134	1169	1109
Kyustendil	554	517	510	521	506	484	449	438	423
Pernik	352	371	321	373	390	373	371	385	377
Sofia region	1076	1083	1033	1019	998	917	868	855	851
Sofia city	5774	5795	6625	6861	6525	6436	6426	6613	6534
South-central	**6083**	**6002**	**5959**	**6022**	**5958**	**5885**	**5970**	**5973**	**5952**
Kardzhali	615	618	620	584	573	566	571	566	562
Pazardzhik	935	906	874	885	858	886	1048	1015	1021
Plovdiv	3144	3156	3208	3242	3244	3199	3137	3208	3178
Smolyan	532	506	452	479	485	448	404	398	396
Haskovo	857	816	805	832	798	786	810	786	795

Appendix 2.1A. Proportion of nurses per region (NUTS-2) and province (NUTS-3) in Bulgaria for the period 2010-2018

Proportion	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	42.2	43.0	43.9	44.7	44.2	43.7	43.5	43.7	43.5
North-West	43.1	43.8	44.2	44.7	45.2	45.0	45.2	45.7	45.3
Vidin	30.4	31.0	31.5	31.8	32.7	28.4	29.9	27.4	27.0
Vratza	47.2	45.6	48.2	48.9	49.6	51.1	48.0	48.4	44.2
Lovetch	43.1	41.8	42.9	41.3	40.9	40.3	40.0	38.2	38.5
Montana	34.8	35.5	33.4	35.1	34.9	34.4	37.8	39.4	40.7
Pleven	49.4	52.9	52.7	53.6	54.8	54.9	55.6	57.7	58.6
Notrh-Central	37.1	39.1	38.8	39.0	39.4	39.3	38.5	37.7	37.8
Veliko Tarnovo	38.9	41.0	39.4	38.9	39.1	39.6	38.4	37.4	37.7
Gabrovo	43.1	47.6	47.6	47.6	50.5	50.0	48.2	45.9	45.6
Razgrad	31.5	34.1	32.2	34.4	34.1	31.5	29.5	29.2	28.9
Ruse	37.6	37.8	38.5	39.1	38.6	39.4	39.6	39.2	40.1
Silistra	31.6	34.1	35.8	35.2	35.7	35.7	35.9	35.7	34.8
North-East	38.9	39.2	38.2	38.5	37.8	37.7	37.5	37.1	37.0
Varna	40.9	40.4	39.2	40.0	38.0	39.9	39.2	39.3	38.9
Dobrich	33.1	33.5	33.3	30.7	32.9	30.0	29.9	29.0	29.5
Targovishte	37.7	39.5	40.8	43.0	42.0	38.3	38.9	37.3	37.7
Shumen	41.0	41.7	38.8	39.8	39.6	39.4	39.9	39.0	38.8
South-East	38.4	39.4	39.6	40.7	41.7	40.8	40.0	39.6	39.1
Burgas	31.5	33.0	35.1	36.4	38.9	37.2	37.8	37.0	36.1
Sliven	33.8	33.7	33.5	33.9	33.9	35.0	35.2	35.0	35.5
Stara Zagora	50.0	51.0	49.5	51.1	51.7	50.5	47.4	47.2	47.5
Yambol	36.8	38.8	38.0	38.2	37.3	36.0	35.8	35.2	32.9
South-West	42.3	42.0	45.3	46.6	44.9	44.3	43.7	44.8	44.1
Blagoevgrad	36.4	36.7	36.0	36.1	35.8	38.0	36.4	37.8	36.2
Kyustendil	38.4	38.0	38.1	39.6	39.2	38.1	36.0	35.8	35.2
Pernik	26.0	27.9	24.5	28.8	30.5	29.5	29.8	31.3	31.0
Sofia region	42.7	43.9	42.3	42.1	41.7	38.6	36.8	36.7	37.0
Sofia city	46.0	44.8	51.0	52.5	49.7	48.8	48.6	49.9	49.2
South-central	40.0	40.7	40.6	41.3	41.1	40.8	41.7	42.0	42.1
Kardzhali	39.9	40.5	40.9	38.7	37.9	37.3	37.8	37.5	37.0
Pazardzhik	32.3	33.0	32.0	32.7	32.0	33.4	40.0	39.1	39.8
Plovdiv	45.0	46.3	47.2	47.8	47.9	47.4	46.7	47.8	47.5
Smolyan	43.0	41.8	37.8	40.8	42.1	39.7	36.6	36.7	37.2
Haskovo	33.6	33.3	33.2	34.6	33.5	33.2	34.5	33.8	34.6

Appendix 2.1B. Number of midwifes per region (NUTS-2) and province (NUTS-3) in Bulgaria for the period 2010-2018

Midwives	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	**3247**	**3270**	**3291**	**3276**	**3263**	**3274**	**3254**	**3207**	**3155**
North-West	**388**	**406**	**405**	**402**	**390**	**385**	**398**	**418**	**375**
Vidin	48	46	40	42	43	40	37	34	38
Vratza	69	77	79	78	78	80	96	83	79
Lovetch	52	54	53	52	50	45	45	39	30
Montana	55	53	54	55	57	58	57	63	58
Pleven	164	176	179	175	162	162	163	199	170
Notrh-Central	**288**	**277**	**274**	**279**	**289**	**306**	**287**	**306**	**303**
Veliko Tarnovo	66	53	44	43	45	43	40	36	38
Gabrovo	37	39	38	37	37	40	35	39	38
Razgrad	29	33	30	31	25	29	34	25	26
Ruse	103	103	107	109	122	136	118	143	138
Silistra	53	49	55	59	60	58	60	63	63
North-East	**491**	**488**	**510**	**483**	**459**	**459**	**455**	**447**	**466**
Varna	303	305	327	309	302	303	296	291	311
Dobrich	70	65	68	63	59	54	61	56	50
Targovishte	50	47	46	46	45	49	46	48	51
Shumen	68	71	69	65	53	53	52	52	54
South-East	**372**	**365**	**374**	**380**	**396**	**393**	**376**	**368**	**358**
Burgas	128	121	124	124	132	138	121	123	110
Sliven	47	49	51	54	68	53	53	57	57
Stara Zagora	153	150	161	163	162	165	171	157	164
Yambol	44	45	38	39	34	37	31	31	27
South-West	**1069**	**1090**	**1077**	**1088**	**1089**	**1074**	**1092**	**1032**	**1017**
Blagoevgrad	85	77	74	77	79	85	84	72	72
Kyustendil	41	50	55	52	52	53	56	48	46
Pernik	32	32	32	30	26	32	34	31	31
Sofia region	108	102	104	104	100	79	80	72	67
Sofia city	803	829	812	825	832	825	838	809	801
South-central	**599**	**602**	**617**	**593**	**603**	**621**	**609**	**597**	**597**
Kardzhali	76	74	72	76	78	76	79	74	64
Pazardzhik	91	88	106	86	94	97	91	83	79
Plovdiv	268	276	276	277	283	307	295	289	297
Smolyan	46	50	45	46	45	42	45	46	47
Haskovo	118	114	118	108	103	99	99	105	110

Appendix 2.1.C Proportion of midwives per region (NUTS-2) and province (NUTS-3) in Bulgaria for the period 2010-2018

Midwives	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	**4.3**	**4.4**	**4.5**	**4.5**	**4.5**	**4.6**	**4.6**	**4.5**	**4.5**
North-West	**4.3**	**4.8**	**4.9**	**4.9**	**4.9**	**4.9**	**5.1**	**5.5**	**5.0**
Vidin	4.5	4.6	4.1	4.4	4.6	4.3	4.1	3.9	4.4
Vratza	3.5	4.1	4.3	4.3	4.4	4.6	5.6	5.0	4.8
Lovetch	3.5	3.8	3.8	3.8	3.7	3.4	3.5	3.0	2.4
Montana	3.6	3.6	3.7	3.9	4.1	4.2	4.2	4.7	4.4
Pleven	5.7	6.6	6.8	6.7	6.3	6.4	6.5	8.1	7.0
North-Central	**3.2**	**3.2**	**3.2**	**3.3**	**3.5**	**3.7**	**3.5**	**3.8**	**3.8**
Veliko Tarnovo	2.4	2.1	1.7	1.7	1.8	1.7	1.6	1.5	1.6
Gabrovo	2.9	3.2	3.1	3.1	3.2	3.5	3.1	3.5	3.5
Razgrad	2.2	2.7	2.4	2.6	2.1	2.5	2.9	2.2	2.3
Ruse	4.2	4.4	4.6	4.7	5.3	6.0	5.3	6.4	6.3
Silistra	4.2	4.1	4.7	5.1	5.2	5.1	5.3	5.7	5.7
North-East	**5.0**	**5.1**	**5.3**	**5.1**	**4.8**	**4.8**	**4.8**	**4.8**	**5.0**
Varna	6.5	6.4	6.9	6.5	6.4	6.4	6.3	6.2	6.6
Dobrich	3.5	3.4	3.6	3.4	3.2	3.0	3.4	3.2	2.9
Targovishte	3.9	3.9	3.9	3.9	3.8	4.2	4.0	4.2	4.6
Shumen	3.5	3.9	3.8	3.6	3.0	3.0	3.0	3.0	3.1
South-East	**3.3**	**3.4**	**3.5**	**3.6**	**3.7**	**3.7**	**3.6**	**3.5**	**3.5**
Burgas	3.0	2.9	3.0	3.0	3.2	3.3	2.9	3.0	2.7
Sliven	2.3	2.5	2.6	2.8	3.5	2.8	2.8	3.0	3.0
Stara Zagora	4.4	4.5	4.9	5.0	5.0	5.1	5.3	4.9	5.2
Yambol	3.2	3.4	2.9	3.0	2.7	3.0	2.5	2.6	2.3
South-West	**5.1**	**5.1**	**5.1**	**5.1**	**5.1**	**5.1**	**5.2**	**4.9**	**4.8**
Blagoevgrad	2.6	2.4	2.3	2.4	2.5	2.7	2.7	2.3	2.3
Kyustendil	2.8	3.7	4.1	4.0	4.0	4.2	4.5	3.9	3.8
Pernik	2.4	2.4	2.4	2.3	2.0	2.5	2.7	2.5	2.5
Sofia region	4.3	4.1	4.3	4.3	4.2	3.3	3.4	3.1	2.9
Sofia city	6.4	6.4	6.2	6.3	6.3	6.3	6.3	6.1	6.0
South-central	**3.9**	**4.1**	**4.2**	**4.1**	**4.2**	**4.3**	**4.3**	**4.2**	**4.2**
Kardzhali	4.9	4.9	4.7	5.0	5.2	5.0	5.2	4.9	4.2
Pazardzhik	3.1	3.2	3.9	3.2	3.5	3.7	3.5	3.2	3.1
Plovdiv	3.8	4.0	4.1	4.1	4.2	4.6	4.4	4.3	4.4
Smolyan	3.7	4.1	3.8	3.9	3.9	3.7	4.1	4.2	4.4
Haskovo	4.6	4.6	4.9	4.5	4.3	4.2	4.2	4.5	4.8

Appendix 2.2: KAP survey with clients:

Interviewer: Hello!I am ..... and we met when we were introduced by your Family Nurse ..... We asked you then if you could answer a few question about the NFP program. That would help us understand whether the program is useful to you. Are you willing to participate?	
1.1. Where did you hear about the existence of the NFP Program for the first time? (Spontaneous answer)	
1. From the healthcare mediators/ field workers? (DO NOT READ)	1
2. From the Program's NFP nurse (DO NOT READ)	2
3. From the neighborhoods' healthcare mediator (DO NOT READ)	3
4. From your GPs (DO NOT READ)	4
5. From a neighbor/friend from the neighborhood (DO NOT READ)	5
6. From a neighbor/friend from outside the neighborhood (DO NOT READ)	6
7. From a close relative (e.g. mother, mother-in-law, sister-in-law, husband's sister) (DO NOT READ)	7
1.2. Which relative in particular? (Spontaneous answer)	
(запишете!)	
8. От брошура (НЕ ЧЕТЕТЕ)	8
9. От интернет (НЕ ЧЕТЕТЕ)	9
10. Друго (запишете)	10

1.2. Did you have any hesitation before joining the Program or did you make the decision quickly? (Spontaneous answer)	
1. I made the decision quickly (DO NOT READ)	1
2. I had some hesitation (DO NOT READ)	2
3. Other (write down) (DO NOT READ)	3

1.3. What convinced you to apply for the Program (EACH MENTIONED spontaneous answer)	
1. The healthcare/field worker convinced me by saying that the Program will be good for me. (DO NOT READ)	1
2. A neighbor/friend said that they are very happy with the Program (DO NOT READ)	2
3. I understood that I can get free medical care and/or check ups (DO NOT READ)	3
4. I understood that I can get free advice on my pregnancy and on taking care of my baby from a medical specialist (DO NOT READ)	4
5. I understood that I can receive free stuff for my baby (diapers, wipes, food) (DO NOT READ)	5
6. Other (write down!)	6
99. I cannot assess (DO NOT READ)	99

1.4. With which things do you feel you need help from your family and friends? (EACH MEANTIONED spontaneous answer)	
1. Имам нужда от съвет как да протече здравословно бременността ми. (НЕ ЧЕТЕТЕ)	1
2. Имам нужда от съвет как да отглеждам детето си. (НЕ ЧЕТЕТЕ)	2

3. I need advice on which doctor should I refer to. (DO NOT READ)	3
4. I need somebody to talk to/I need emotional support (DO NOT READ)	4
5. I need financial support (DO NOT READ)	5
6 I need my husband to take better care of me (DO NOT READ)	6
7. I need clothes for pregnant women (DO NOT READ)	7
8. I need a bed/cradle for the baby (DO NOT READ)	8
9. I need help in the household (DO NOT READ)	9
10.I need cosmetics (DO NOT READ)	10
11. Other (write down) (DO NOT READ)	11

1.5. Who is the person you can rely on the most? (EACH MENTIONED spontaneous answer)	
1. My partner/my husband (DO NOT READ)	1 --> 1.7
2. The child's father (in case he is not the current partner/husband) (DO NOT READ)	2 -->1.7
3. My mother (DO NOT READ)	3 --> 1.7
4. My father (DO NOT READ)	4 --> 1.7
5. My Mother-in-law (DO NOT READ)	5 --> 1.7
6. My father-in-law (DO NOT READ)	6 --> 1.7
7. My sister/s (DO NOT READ)	7 --> 1.7
8. My brother/s (DO NOT READ)	8 --> 1.7
9. All of my family (DO NOT READ)	9 --> 1.6
10. Other (write down) (DO NOT READ)	10 --> 1.7

1.6. OK, but still, there is someone whom you can rely on the most. Who is that person for you? (EACH MENTIONED spontaneous answer)	
1. My partner/my husband (DO NOT READ)	1
2. The child's father (in case he is not the current partner/husband) (DO NOT READ)	2
3. My mother (DO NOT READ)	3
4. My father (DO NOT READ)	4
5. My mother-in-law (DO NOT READ)	5
6. My father-in-law (DO NOT READ)	6
7. My sister/s (DO NOT READ)	7
8. My brother/s (DO NOT READ)	8
9. All of my family (DO NOT READ)	9
10. Other (write down) (DO NOT READ)	10
1.7. Do you already know whether you are going to have a boy or a girl? (Spontaneous answer)	
1. YES (DO NOT READ)	1
2. NO (DO NOT READ)	2 --> 1.9

1.8. Беше ли щастлива, когато научи, че бебето ще бъде момче/момиче? (Спонтанен отговор)	
1. ДА (НЕ ЧЕТЕТЕ)	1
2. НЕ (НЕ ЧЕТЕТЕ)	2

1.9. Who did you tell first that you were pregnant? (Spontaneous answer)	
1. My partner/my husband (DO NOT READ)	1
2. The child's father (in case he is not the current partner/husband) (DO NOT READ)	2
3. My mother (DO NOT READ)	3
4. My father (DO NOT READ)	4
5. My mother-in-law (DO NOT READ)	5
6. My father-in-law (DO NOT READ)	6
7. My sister/s (DO NOT READ)	7
8. My brother/s (DO NOT READ)	8
9. A friend (DO NOT READ)	9
10. Other (write down) (DO NOT READ)	10

1.10. How did you feel when you found out that you were pregnant (EACH MENATIONED spontaneous answer)	
1. I was glad (DO NOT READ)	1
2. I was surprised/shocked (DO NOT READ)	2
3. I felt scared (DO NOT READ)	3
4. I was worried (DO NOT READ)	4
5. Other emotion (write down) (DO NOT READ)	5

1.11. Do you know how many children do you want? (Spontaneous answer)	
1. YES (DO NOT READ)	1--> 1.12
2. NO (DO NOT READ)	2 --> 1.13
3. I don't know (DO NOT READ)	3 --> 1.13

1.12. How many children do you want to have? (Spontaneous answer)
(write down)

1.13. Do you know how many children does your partner/husband want? (Spontaneous answer)	
1. YES (DO NOT READ)	1 --> 1.14
2. NO (DO NOT READ)	2 --> 1.15
3. I don't know (DO NOT READ)	3 --> 1.15
1.14. How many does he want? (Spontaneous answer)	
(write down)	

1.15. Occasionally each family has some disagreement. When you disagree are you more likely to step back or stand by your opinion (Spontaneous answer)	
1. I usually step back (DO NOT READ)	1
2. I usually stand by my opinion (DO NOT READ)	2
3. Our family does not disagree/do not argue (DO NOT READ)	3
4. Depends on the dispute (DO NOT READ)	4

1.16. In your opinion, which are your best qualities?
(write down)

1.17. What would you change about yourself?
(write down)

1.18. When someone encounters a situation, which is hard to resolve, we say that they have a problem. Would you say that you can cope with the problems which you usually face?	
1. Yes, usually I can (DO NOT READ)	1
2. No, usually I cannot (DO NOT READ)	2
3. I do not know (DO NOT READ)	3
99. Other (write down!).....	99

1.19. We talked about whether you need the support of your family? Is there any other type of help/support which your family cannot provide? (DO NOT READ! E.g. conversation with a medical specialist, checkup, social services, educational services)	
1. YES (DO NOT READ)	1 --> 1.20
2. NO (DO NOT READ)	2 --> 1.21
3. Other (write down!)	3 --> 1.21

1.20. What particular type of help/support do you need?	
1. Social consultations and support (DO NOT READ)	1
2. Social assistance (DO NOT READ)	2
3. Access to information on how to have a healthy pregnancy (DO NOT READ)	3
4. Psychosocial support (DO NOT READ)	4
5. Pregnancy monitoring (DO NOT READ)	5
6. Accompaniment and consultations on free medical checkups (DO NOT READ)	6
7. Access to GPs (DO NOT READ)	7
8. Consultations on breastfeeding (DO NOT READ)	8
9. Kinesiotherapist (DO NOT READ)	9
10. Legal consultations (DO NOT READ)	10
11. Other (write down!)	11

1.21. Are you enlisted with: ONE answer per EACH row (Spontaneous answer)	YES (DO NOT READ)	NO (DO NOT READ)	I DON'T KNOW (DO NOT READ)
1. GPs	1	2	99
2. Gynecologist	1	2	99

1.22. The Program is complex and I do not know everything about it. Can we please talk about the things you need, did you received them and were they helpful?			
1. Do you need to talk to the NFP nurse about the pregnancy and about the raising of the child? (Spontaneous answer)	Yes	No --> 3	I do not know --> 3
2. Were the conversations with the nurse about the pregnancy and about the raising of the child useful? (Spontaneous answer)	Yes	No	I do not know
3. Is it acceptable to call the nurse in case you need them? (Spontaneous answer)	Yes	No --> 5	I do not know --> 5
4. Does that make you feel more secure? (Spontaneous answer)	Yes	No	I do not know
5. Is it acceptable to call the Program's mediator in case you need them? (Spontaneous answer)	Yes	No --> 7	I do not know --> 7
6. Does that make you feel more secure? (Spontaneous answer)	Yes	No	I do not know
7. Is it acceptable if the mediator is present during your meeting with the nurse? (Spontaneous answer)	Yes	No --> 9	I do not know --> 9
8. Does this make you feel more secure? (Spontaneous answer)	Yes	No	I do not know
9. So far, has the NFP nurse left you any reading materials? (Spontaneous answer)	Yes	No --> 12	I do not know --> 12
10. Were these materials useful to you? (Spontaneous answer)	Yes	No -->11	I do not know -->12

11. If not, why so? (Spontaneous answer)	Because I do not have time to read them	Because I do not understand them	Because I cannot read	Other (Write down!)
12. So far, has the NFP nurse given you advice on how to stay healthy during your pregnancy? (Spontaneous answer)		Yes --> 13	No --> 15	I do not know --> 15
13. Were the advice useful? (Spontaneous answer)		Yes -->15	No -->14	I do not know -->15
14. if not, why so? (Spontaneous answer)	Because my relatives have told me how to stay healthy during my pregnancy	Because I do not care	Because I do not believe that the advice are good	Other (Write down!)
15. So far, has the NFP nurse given you advice on how to cope with anemia (Spontaneous answer)		Yes	No -->18	I do not know -->18
16.If she has, were the advice useful? (Spontaneous answer)		Yes -->18	No-->17	I do not know -->18
17.if not, why? (Spontaneous answer)	I know from my relatives how to come with anemia	Because I do not care	Because I cannot afford proper food/ supplements	Other (write down)
18. So far, have you spoken to the FNP nurse about the changes in your body (Spontaneous answer)		Yes	No --> 20	I do not know --> 20
19. Have these conversations been useful? (Spontaneous answer)		Yes	No	I do not know
20. So far, has the NFP nurse talked with you about how drinking coffee, alcohol, the use of cigarettes or drugs affect the babies? (Spontaneous answer)		Yes --> 21	No --> 23	I do not know --> 23
21. Is this useful? (Spontaneous answer)		Yes	No-->22	I do not know-->23

22. If not, why so? (Spontaneous answer)	Because I do not use such substances	Because I already know	Because I do not care	Other (write down)
23. So far, has the NFP nurse given you advice on where you can find free social services and support? (Spontaneous answer)		Yes --> 24	No --> 1.23	I do not know --> 1.23
24. Were these advice helpful? (Spontaneous answer)		Yes	No	I do not know

1.23 Is it true that: (ONE answer per row)	YES (DO NOT READ)	NO (DO NOT READ)	I DO NOT KNOW (DO NOT READ)	I HAVE NOT BEEN ADVICED ON THIS (DO NOT READ)
1. The advice you receive from your family, regarding your pregnancy, have been useful (Spontaneous answer)	1	2	3	4
2. The advice you receive from your friends, regarding your pregnancy, have been useful (Spontaneous answer)	1	2	3	4
3. The advice you receive from doctors, regarding your pregnancy, have been useful (Spontaneous answer)	1	2	3	4
4. The advice you receive from the NFP nurse, regarding your pregnancy, have been useful (Spontaneous answer)	1	2	3	4

1.24.	YES (DO NOT READ)	NO (DO NOT READ)	I DO NOT KNOW (DO NOT READ)	
1. Has the Program's moderator been useful? Spontaneous answer)	1	2	99	
2. Has the NFP nurse been useful? (Spontaneous answer)	1	2	99	
3. Has the neighborhood's health moderator been useful? (Spontaneous answer)	1	2	99	

4. Has the gynecologist who performs your checkups been useful? (Spontaneous answer)	1	2	99	98. I do not have a gynecologist
5. Has your general practitioner been useful? (Spontaneous answer)	1	2	99	98. I do not have a general practitioner

1.25. Every woman has different needs during her pregnancy, and later, when she takes care of her baby. Please tell us: (ONE answer per row)				
1. Do you need more frequent meetings with the NFP nurse?(Spontaneous answer)	Yes	No	I do not know	
2. How often do you usually meet with the NFP nurse (Spontaneous answer)	Once a week	Every other week	Once a month	Other (write down)
3. Do you need your meetings with the NFP nurse to be longer? (Spontaneous answer)	Yes	Not	I do not know	
4. How long does a meeting usually last? (Spontaneous answer)	Less than an hour	About an hour	More than an hour	Other (write down)
5. DO you need additional reading materials from the NFP nurse? (Spontaneous answer)	Yes	No	I do not know	

2.1. In your opinion, what level of education should a man have in order to be able to take care of his family (Circle the chosen answer, Spontaneous answer, ONE answer)	
1. Elementary (completed 4th grade) (DO NOT READ)	1
2. Lower secondary (completed 7th/8th grade) (DO NOT READ)	2
3. Upper secondary school (DO NOT READ)	3
4. Vocational school (DO NOT READ)	4
5. College (DO NOT READ)	5
6. University degree (DO NOT READ)	6
99. I do not know (DO NOT READ)	7

2.2. In your opinion, what level of education should a woman have in order to be able to take care of his family (Circle the chosen answer, Spontaneous answer, ONE answer)	
1. Elementary (completed 4th grade) (DO NOT READ)	1
2. Lower secondary (completed 7th/8th grade) (DO NOT READ)	2
3. Upper secondary school (DO NOT READ)	3
4. Vocational school (DO NOT READ)	4
5. College (DO NOT READ)	5
6. University degree (DO NOT READ)	6
99. I do not know (DO NOT READ)	99

	In numbers:	I do not know (DO NOT READ)
2.3. At what age should a man marry? (Spontaneous answer)	...ε.	99
2.4. At what age should a man have his first child? (Spontaneous answer)	...ε.	99
2.5. At what age should a woman marry? (Spontaneous answer)	...ε.	99
2.6. At what age should a woman have her first child? (Spontaneous answer)	...ε.	99

2.7. Is it important: (ONE answer per row)

	YES (DO NOT READ)	NO (DO NOT READ)	I do not know (DO NOT READ)
1.Young women should complete their upper secondary education before giving birth (Spontaneous answer)	1	2	3
2. Young women should complete their university degree before giving birth (Spontaneous answer)	1	2	3
3. Young women should have a permanent job and an employment contract (Spontaneous answer)	1	2	3
4. Women must have medical insurance and must have an employment contract experience before their pregnancy and take their maternity leave? (Spontaneous answer)	1	2	3

5. Women must have gynecologist checkups before pregnancy (Spontaneous answer)	1	2	3	
6. Women must have gynecologist checkups during the whole course of their pregnancy (Spontaneous answer)	1	2	3	
7. Women should have an NFP nurse at their home during pregnancy and after labour (Spontaneous answer)	1	2	3	

2.8. Please share your observations:	YES (DO NOT READ)	NO (DO NOT READ)	I DO NOT KNOW (DO NOT READ)	
2.8_1 Are the doctors in Bulgaria good specialists? (Spontaneous answer)	1	2	99	
2.8_2 Are the nurses in Bulgaria good specialist? (Spontaneous answer)	1	2	99	
2.8_3 Are the health moderators in the Roma neighborhood good specialists? (Spontaneous answer)	1	2	99	
2.8_4If necessary, will the ambulance arrive on time? (Spontaneous answer)	1	2	99	
	YES (DO NOT READ)	NO (DO NOT READ)	I DO NOT KNOW (DO NOT READ)	
2.8_5 If necessary, will an ER team take care of you (Spontaneous answer)	1	2	99	
2.8_6 Will you be emergently admitted to the hospital without paying extra money? (Spontaneous answer)	1	2	99	
2.8_7 If you are in a hospital, will the attitude towards you change since you live in Fakulteta/ Hristo Botev/ Filipovtsi (Spontaneous answer)	1	2	99	

2.9. Imagine a ladder with 9 steps. At the lowest, you have the neighborhood's poorest man, at the highest – the neighborhood's richest. Where would you place your family as of now?

(ONE ANSWER)

1	2	3	4	5	6	7	8	9	No answer = 100

2.10. Every household has various types of expenses – e.g. for clothes, food, medicine, for communal bill like electricity, water, telephone. How much do you roughly spent each month for all these things?				..... лв.
				100 = I do not know --> 2.11
2.11.? If you do not know, who is the person from your household, who usually takes care of the family expenses?				
(Spontaneous answer)				

Thank you for your time! If you want to share something further with us, you can contact us at:

Institute “Open Society Foundation”
Solunska 56 Str.
Phone: 02/930 66 39
Ralitsa Dimitrova - sociologist

The next questions are intended for the interviewer and should be answered after the end of the interview.

2.12 Please, specify the neighborhood that the client was interviewed in:
.....

2.13. Was someone else, apart from the client herself, present during the interview?	
1. No	1
2. Yes, a relative/friend of the client	2
3. Yes, the NFP nurse and/or the healthcare mediator/fieldwork assistant	3

2.14. Please, fill in whether in your opinion, the house of the client that you visited is in a better or worse condition, compared to the average house within the neighborhood:	
1. Worse condition	1
2. Better condition	2
3. In an average condition for the neighborhood	3
4. Else (specify!)	4