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Motivating parents-to-be and young parents with brief interventions

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The preventive healthcare project *GeMuKi: Gemeinsam Gesund Vorsorge Plus für Mutter und Kind* (Strengthening health promotion: enhanced check-up visits for mother and child), which has been funded by the Innovation Fund of the Federal Joint Committee (G-BA) for four years, is about supporting health in the first 1,000 days of a child's life. The project aims to reduce the risk of overweight and obesity in mother and child, strengthen the health literacy of mothers-to-be and young parents, improve cooperation between medical and non-medical healthcare professionals, and strengthen the communication skills of the professionals involved in care.

GeMuKi is a complex intervention comprising various components. It is being implemented in cooperation with gynecologists, midwives and pediatricians. GeMuKi supplements the statutory routine prenatal visits and infant check-ups carried out during pregnancy and the first year of a child's life with a structured, low-threshold preventive



measure in the form of individual counseling sessions covering the topics of body weight, exercise, nutrition and healthy lifestyle. The aim of these consultations is to stimulate women’s intrinsic motivation to behave in ways that promote health. In this way, GeMuKi is supporting the German national health goal of “health in the perinatal period and the first year of life”, and is in line with both the WHO strategy for prevention of obesity during infancy and the German national action plan for health literacy, plus it contributes to the further development of the healthcare system in Germany. GeMuKi is the project of a consortium led by the Platform for Nutrition and Physical Activity (peb), Berlin. This article describes the intervention and the initial observations and insights gained from its implementation in practice.

Background

A child’s risk of being overweight and developing chronic diseases (such as diabetes) in later life is already being influenced before and during pregnancy by the mother’s lifestyle, the mother’s baseline weight, and maternal gestational weight gain (preconception and prenatal programming) [1–3]. One in three women of child-bearing age is overweight and 50% of pregnant women have a gestational weight gain that exceeds the recommendations of the US *Institute of Medicine* (IOM) [4–7]. During the sensitive life stage of pregnancy, parents-to-be are often particularly motivated to optimize their lifestyles and are therefore often open to recommendations about health-promoting changes they could make to their habits [8]. The statutory routine prenatal visits and infant check-ups performed by physicians and midwives are an ideal starting point for interventions in this area. During pregnancy, 100% of women in Germany participate in at least one routine prenatal visit, and 98% of these are carried out by a gynecologist. Furthermore, 90% of children in Germany are closely monitored through statutory routine infant check-ups at a pediatric medical practice. The routine prenatal visits and infant check-ups are particularly useful in terms of reaching socially disadvantaged families [9].

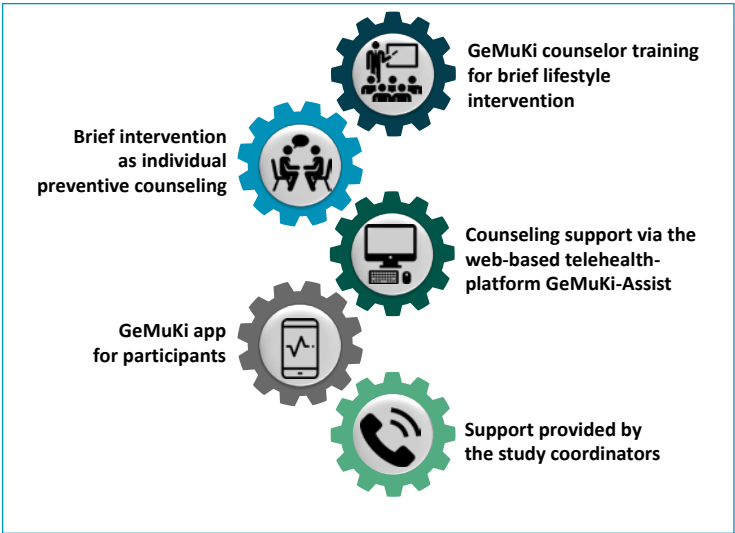


Fig. 1: The components of the intervention in detail (adapted according to [11])

Thus far, messaging from professionals involved at this stage of life (gynecologists, midwives and pediatricians) has not been consistent on topics such as nutrition and exercise, which are major influencing factors in terms of preventing diseases. In order to improve the quality of care and highlight new paths of communication, the GeMuKi project has developed a new, innovative type of care. At the same time, the efficacy, cost-effectiveness and implementation process of this new type of care is being evaluated in a study (cluster RCT) [10].

GeMuKi—a new type of care

The project takes advantage of established routine prenatal visits and infant check-ups in order to embed this new type of care (counseling on lifestyle through brief intervention sessions) into existing structures. This is done through focused conversations based on predetermined, consistent, and scientifically sound prevention messaging, supplemented by the use of digital applications. It is being tested in selected regions of Baden-Württemberg (Germany) as part of the GeMuKi study [10].

GeMuKi comprises the following components (♦ Figure 1):

- 1. GeMuKi counselor training for brief lifestyle intervention
- 2. Brief intervention as individual preventive counseling
- 3. Counseling support via the web-based telehealth-platform GeMuKi-Assist
- 4. GeMuKi app for participants
- 5. Support provided by the study coordinators

1. GeMuKi counselor training for brief lifestyle intervention

At the start of the implementation of the project, the providers (gynecologists, midwives, pediatricians and practice assistants at gynecology and pediatric practices) were given special training for the GeMuKi intervention at a one-day, free-of-charge workshop. The training consisted of the recommendations of Healthy Start—Young Family Network (Gesund ins Leben), which cover key messages about healthy lifestyle [12], the main functions of the telehealth platform GeMuKi-Assist and how to use the GeMuKi app (see parts 3 and 4), especially the fundamentals of motivational interviewing (MI) as a counseling method. The training was developed and provided by experienced trainers from the

Healthy Start—Young Family Network. They were ecotrophologists with additional qualification in motivational interviewing (MI). The providers who took part in the training received points on their continuing professional development records. (For a detailed description of the training concept, please refer to the [III](#) article in the next issue.)

2. Brief intervention as individual preventive counseling

At the beginning of each counseling session, the woman chooses the topic that is most relevant to her from the selection of available topics ([III](#) article in the next issue) using the counseling cards created especially for the project. At the first appointment at the beginning of the pregnancy, the topics of gestational weight gain and smoking and alcohol should always be addressed. Each brief counseling session takes about 10 minutes.

Selected elements of motivational interviewing (MI) are used as the counseling method. At the end of each conversation, the patient sets herself a (health) goal that she wants to reach by the time of the next unit in the sequence. At each consultation, the woman is asked how she did with the goal set at the previous consultation. This serves as a conversation starter. The goals are to be set using the SMART formula wherever possible: *specific, measurable, action-oriented/attractive, realistic, time-bound*.

This helps and motivates the women to make health-promoting behaviors part of their everyday lives. Another target is to help women who have greater needs or existing risk factors (e.g. obesity, excessive weight gain, lack of physical activity, following a special diet) develop a willingness to accept additional professional support: for example from dietitians or breastfeeding and lactation consultants. Relevant contact details for this are provided to the women in the GeMuKi app and are also provided to the physicians and midwives as contact lists. In addition to the brief conversations, the women are given selected educational materials (brochures and stickers for the maternity and child medical record booklets) [12]. These materials summarize the key messages about a healthy lifestyle during pregnancy, lactation and infancy.

Assuming that the chain of care with all of the relevant providers is in place, the pregnant women/mothers have up to eleven individual counseling sessions with the gynecologist, midwife and pediatrician as part of routine prenatal visits and infant check-ups (♦ Figure 2). The gynecologist advises at four appointments during pregnancy (P1–P4), the midwife advises at three appointments (M1–M3) during pregnancy and after delivery, and the pediatrician advises at four appointments (E3–E6) during infancy. The GeMuKi counselors are able to bill the sessions as healthcare services on the basis of a selective contract agreed upon with the Association of Statutory Health Insurance Physicians of Baden-Württemberg (KVBW) and the Baden-Württemberg Association of Midwives (Hebammenverband Baden-Württemberg).

3. Counseling support via the web-based telehealth-platform GeMuKi-Assist

The telehealth platform GeMuKi-Assist is a web-based data platform developed especially for this project in cooperation with the Fraunhofer Institute for Open Communication Systems (FOKUS), Berlin. It is simple and intuitive to use.

The telehealth platform GeMuKi-Assist consists of three components:

- the GeMuKi-Assist counseling tool for providers (GeMuKi counselors)
- the mobile app for the participants (see also part 4)
- the administrative interface for the study coordinators (for the data management required for the study) (see part 5 with regard to this)

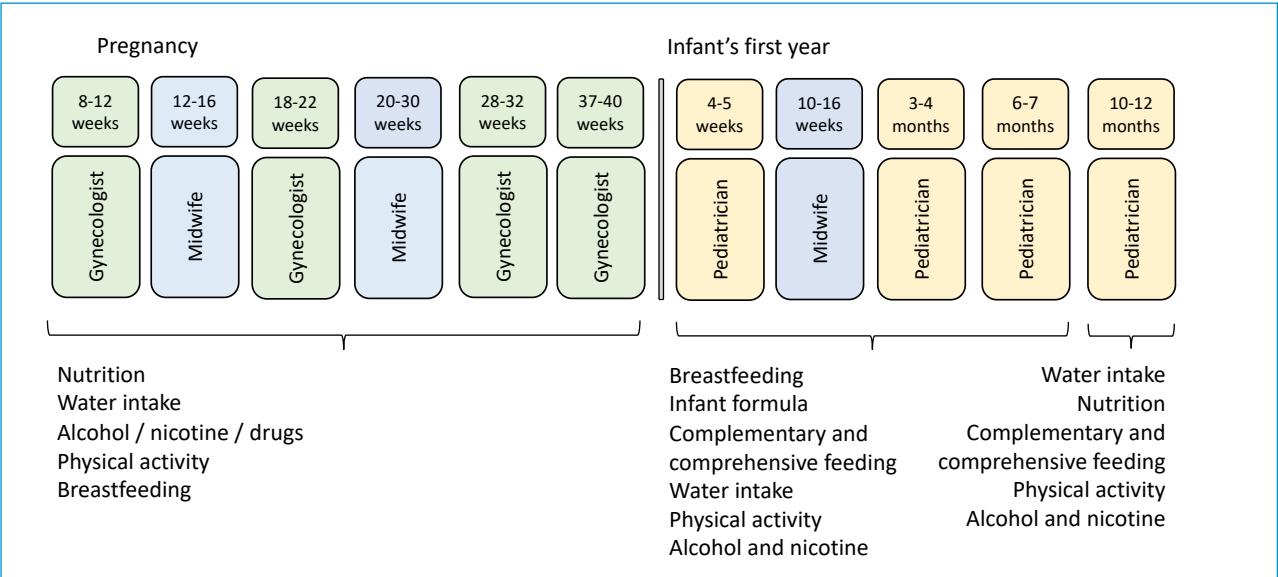


Fig. 2: The GeMuKi counseling process and selection of topics (adapted according to [10])



Previous counseling process			
Counsel unit	Topic and goals		
E4	Infant formula	Choice of product	If formula supplementation is needed, use the pre-formula.
E3	Breastfeeding	Other	Breastfeeding is working fine. Way to go!
P3	Drinking water	Drinking quantity	Drink 1.5 l of water or unsweetened tea daily. Water can be flavored with fruits (e.g. lemon).
		Sweet drinks (coke, soft drinks, juice)	Reduce soft drinks. One glass of juice on Sundays and one glass of soft drinks per week.
		Coffee and tea	One or two cups of latte in the morning is O.K.
M2	Exercise	Daily activities	Continue daily walks with the dog in the evening. At home always walk down the stairs instead of taking the elevator. Always walk up the stairs in the subway instead of taking the escalator.
		Physical training	Maintain pregnancy yoga with the new program each Monday and Thursday for half an hour.
P2	Nutrition	Fruit and vegetable	Every second day (Monday/Wednesday/Friday) take raw fruits and vegetables for snacking into the office.
		Sweets/Snacks	Consciously enjoy a hand of sweets or snacks a day.

Fig. 3: Example of the process for the consultations and how they are recorded in the telehealth platform GeMuKi-Assist

The providers can access the digital files of their GeMuKi patients by logging in to the password-protected web-based counseling tool. In the counseling tool, medical data from the maternity and child medical record booklets are collected for scientific evaluation, together with the content of the consultation discussion. The telehealth platform and all of its associated data processing processes comply with the requirements of the new General Data Protection Regulation (GDPR) and are subject to a comprehensive data protection concept. To support the consultation, the telehealth platform contains the most important recommendations for each topic. This ensures that this information can be looked up any time. It also contains examples of open questions on specific topics. The counseling topics and the goals agreed upon together with the woman are documented. The patient's personal goals are entered in a free text field (see ♦ Figures 3 and 4 regarding the counseling process). The GeMuKi app reminds the patients about their goals (see below). For each patient, the recommended gestational weight gain (10–16 kg for normal weight women) is displayed as a chart. The individual weight curve of each woman is automatically calculated and displayed using the baseline BMI before the start of pregnancy and the weight data entered in the digital maternity medical record of the counseling tool. The participant herself does not have access to this weight curve, but she can view the chart of it during a visit to the doctor or midwife if necessary and if she so desires. For overweight or obese patients, a note appears indicating that a lower weight gain (10 kg maximum) is recommended. As soon as the child is born and the corresponding weight data are entered in accordance with the child medical record booklet, a chart showing the child's individual percentile curve is displayed. The counseling process for each patient (topic selected/content covered and goals set) is visible to all of the providers involved with the patient. This serves both as a way of connecting the professional groups with each other and as a way of starting the discussion with the patient. In addition, a note field that can be viewed by all of the providers involved with a patient is provided to support interdisciplinary cooperation and the optimization of the chain of care, which is one of the key aims of GeMuKi.

4. GeMuKi app for participants

The participants use the password-protected GeMuKi app to view the goals they have set and recorded in the consultation with the physician and the midwife (♦ Figure 4). They are also given push

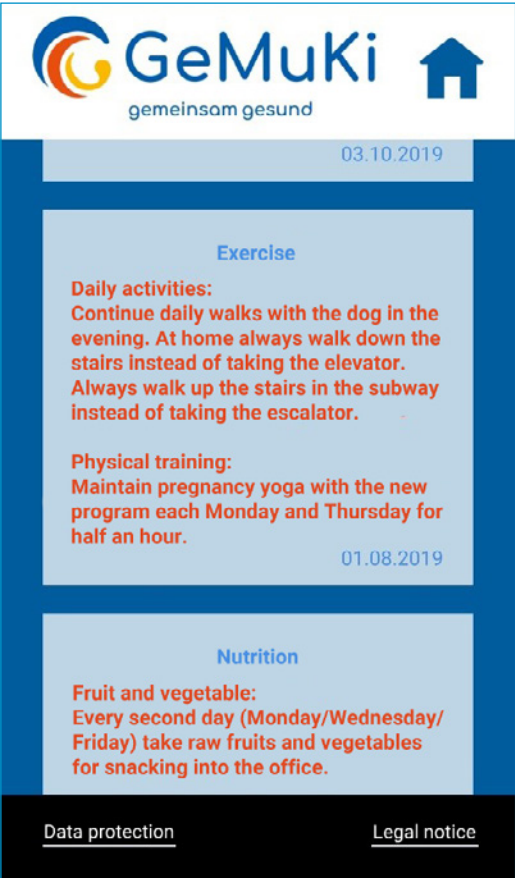


Fig. 4: Example of how the counseling process is displayed in the GeMuKi app

notifications to remind them of their goals at selected points in time. In addition, the app provides supplementary information in the form of support materials (such as brochures, a video about gestational weight gain and information about other apps and coaching programs) and inspiration for how to achieve a healthy lifestyle (e.g. how to search for relevant information using a zip code search and a Google keyword search). The information provided has been checked for reliability and it has been agreed upon with all project partners and with the Healthy Start—Young Family Network (Gesund ins Leben). Therefore, the in-person consultation is supplemented by scientific materials that can be read at any time. The app also has a note-taking function for personal entries. Questionnaires stored in the app are used to collect data on the individual's lifestyle at selected points in time [10].

5. Support provided by the study coordinators

The provision of in-person and over-the-phone support by regional study coordinators to both participants and the providers is an integral part of the GeMuKi intervention. All of the participating midwives, physicians and trained practice staff received in-person training from the study coordinators to familiarize them with the study materials and procedures and with how to use the telehealth platform GeMuKi-Assist.

Physicians and midwives are supported in the practical implementation of the consultations: tips and advice on how to formulate SMART goals are provided. If the GeMuKi counselors have questions—for example about special diets—they can contact the study coordinators. The study coordinators can also arrange for them to work together with professionals who are experienced in the required field if necessary.

Using the telehealth platform GeMuKi-Assist (specifically the administrative interface), the study coordinators check all of the data for completeness and plausibility. Any missing data is entered and implausible data is corrected.

The study coordinators provide both the counselors involved and the women themselves with contact lists of gynecologists, midwives and pediatricians who are participating in GeMuKi. This helps to connect providers with each other and optimize the chain of care for women.

Why GeMuKi is innovative

The four following care goals guided the planning and development of the GeMuKi lifestyle intervention:

- Strengthening the health literacy of mothers-to-be and young parents
- Reducing lifestyle-related risk of overweight and obesity in mother and child
- Strengthening the communication skills of the providers (GeMuKi counselors)
- Improving interdisciplinary cooperation between the various stakeholders in the healthcare system (medical and non-medical professionals) through targeted networking

GeMuKi builds on the results and findings of various interventions and research projects: “9+12: Healthy during pregnancy and first year of life” in Ludwigsburg, FeLiPo (Feasibility of a lifestyle-intervention in pregnancy to optimize maternal weight development) in Munich and GeliS (Healthy living during pregnancy) in Bavaria [3, 13–15].

The GeMuKi lifestyle intervention is designed as a series of brief interventions (approximately 10 min) using innovative communication

methods (including elements of motivational interviewing—MI) to motivate participants to convert their knowledge of what a healthy lifestyle is into feasible everyday behaviors and routines. The individual GeMuKi counseling sessions follow a semi-standardized procedure that is adapted to the individual situation of each participant. For the GeMuKi counseling sessions, the framework conditions required by the standard procedures at each medical practice were taken into account.

The in-person consultations are supported by specially developed digital applications. The counseling tool allows all of the providers involved with a particular patient to make notes and track the counseling process. This ensures that the various professional groups involved in the chain of care are digitally networked. The participating women receive their individual goals (that have been agreed upon with the counselor) on the GeMuKi app. Push notifications at regular intervals automatically remind them of these goals.

Observations and insights gained from implementation in practice

There were some challenges associated with the implementation of the intervention. These are described here based on the experiences of the study coordinators to date:

- The training course for the GeMuKi counselors was originally planned to take two days but it was shortened to a single-day course before the project began. This required a balance to be struck between the relatively short course length and providing sufficient course content in terms of training on lifestyle and MI.
- Many providers find that providing this preventive lifestyle advice takes too much time and organizational effort. Therefore, the desired chain of care (joint care of a participant by all three professional groups) often cannot be achieved.
- Feedback from some individual stakeholders indicated that potential participants may feel overwhelmed by having to deal with the registration process for taking part in the scientific study during early pregnancy (12th week) and could therefore decline to participate in GeMuKi for that reason.
- In addition, the use of digital data recording methods could cause skepticism among both participants and providers in some cases.
- In some cases, the requirement to use the web-based telehealth platform (GeMuKi-Assist) to provide advice and collect data was accepted only reluctantly. Often, the counseling sessions were

documented on paper first and then entered into the platform. This led to additional time and effort being required, which was not planned for. Some of the providers have only limited Internet access, which is why tablets were provided.

- Feedback from some GeMuKi counselors indicated that using the motivational interviewing techniques in the discussions and agreeing upon and formulating SMART goals was challenging in everyday practice.
- During the implementation of GeMuKi, it became clear that there is sometimes conflict between doctors and midwives as a result of workplace politics, which this type of intervention is not always able to overcome.

Conclusion and future outlook

The benefits of GeMuKi as an approach to preventive medicine are being assessed in a scientific evaluation. The evaluation concept takes the multi-faceted nature of this complex intervention into account, since it consists of several components and is carried out in cooperation with specialists from various professions. Quantitative methods of empirical social research are applied in the course of the summative evaluation and these are supplemented with qualitative methods for formative process evaluation. When the study is completed in 2021, it will be possible to evaluate the efficacy of this new type of care, as well as its implementation process and cost-effectiveness [10, 11]. The findings will serve as the foundation for a general rollout of preventive counseling in the existing health care system in Germany.

Current knowledge about perinatal programming demonstrates the importance of a balanced diet, sufficient exercise, a healthy lifestyle and normal weight during pregnancy for the health of the child, since the effects can extend even into old age. Therefore, embedding preventive counseling into the existing routine prenatal visits and infant check-ups performed by the gynecologist, the midwife and later the pediatrician is a sensible and promising approach since it is highly accessible to all families. The experience and results gained from the evaluation of the GeMuKi project will provide insights into the best way to organize and conduct counseling sessions, as well as insights into which structures in the healthcare system need to be expanded for this purpose, and the extent to which other professional groups should be involved.

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