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The Implementation of Posyandu for Preconception Women in Banggai District Starting at the Office of Religious Affairs (KUA) to Meet the SDGs's Target in Banggai Regency, Central Sulawesi

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Abstract: One of innovative efforts to solve the problem of stunting and low birth weight in Banggai was by giving information to the prospective couples (brides and grooms) at the Office of Religious Affairs (KUA) for letter of marriage approval. The objective of the research was to know the level of knowledge of the prospective couples on nutrition, reproductive health, and the first 1000 days of life that was implemented at KUA. The research was conducted in three districts of Banggai. This was a cross-sectional study and 12 prospective couples who attended the one day training course started with pretest and educational material of reproductive health, nutrition, the first 1000 days of life and ended with posttest and analyzed by T-test. Age of participants were 24 years (25%), with education degree was senior high school (66.7%). There was a significant difference before and after course between knowledge about nutritious food ($p=0.02$) and knowledge of first 1000 days of life ($p=0.039$). Integrated Post of PcW in Banggai District has become an innovative intervention to increase the health literacy status of PcW. We need strong commitment, integrated multi sectoral stakeholder networks, comprehensive approaches, and interventions to improve the health of preconception women.

1 INTRODUCTION

The Maternal Mortality Rate (MMR) in Banggai district (2014) was relatively high, (279/100.000), compared to the national target 2015 (102/100.000), stunting was 36.8 % based on Basic Health Research (Riskesdas, 2013), and low birth weight baby (LBW) that reached 164 cases in 2015. (Robert, 2013) Another problem is the high prevalence of stunting (short toddlers) at 31.4% where both problems are related to nutritional problems of pregnant mothers. To overcome these problems, innovative efforts to accelerate improvement of the nutritional and health status of Preconception Women (PcW) has been initiated on nutrition improvement of the first 1000 days of life (1000 HPK), 270 days of gestation and 730 days or 2 years age of children, in Integrated Health Service (Posyandu) of PcW. The activity started with capacity building of the healthcare providers (doctors, midwives and nurses) of related

primary health care (Puskesmas) and health volunteer cadres on the main function of Posyandu for PcW. Posyandu is an integrated service place in a village built by and for community on health promotion and prevention especially for mother and child care supported by the nearest Puskesmas.

Preconception health care is a health strategy to improve women's health in order to reduce maternal and child mortality (Cetin, 2010). The healthcare providers can identify and manage mothers at risk and diagnose early detection. So that, the nutritional improvement of women health status should be started since they are at the preconception period or since they are becoming a bride. We started it since the groom and the bride came to the Office of Religious Affairs for getting Marriage Registration Letter.

1.1 Commitment to support the Scaling-Up Nutrition (SUN) Program in Banggai District

The government of Banggai district together with the Ministry of Health signed a cooperation agreement on *Posyandu* Reposition, on March 26, 2015; as a part of the government's effort to decrease stunting rate. The first step was focused on the rescue of the first 1000 days of life through a strong commitment of the Regent Regulation, dated March 21, 2015; about Integrated Health Service (*Posyandu*) of PcW regarding the formation of a task force team of 1000 HPK movement in Banggai.

1.2 Integrated Health Service (Posyandu) for PcW in Banggai District starting at the Office of Religious Affairs (KUA)

Preconception Women's Service (brides and newlywed) is a comprehensive service to preconception women to improve women's health and nutritional status, to prevent and to treat anaemia, and to monitor pregnancy complications and preeclampsia, with the ultimate goal to reduce MMR and IMR. In this service, preconception women receive health and nutritional guidance, multivitamin and mineral, and early pregnancy monitoring. The target of the program is all prospective couples and newly wedding women and their husbands who are preparing for their pregnancies and child bearing.

Firstly, the brides and grooms reported to the lowest or root officer, the neighbourhood chairman/RT/RW and the village chief (Lurah) who provides a letter of referral to the brides and grooms for conducting a health check up at the nearest *Puskesmas*.

Secondly, *Puskesmas* provides health services such as anthropometric examination (height, weight, upper arm circumference), blood pressure measurement, haemoglobin examination to detect anaemia, examination of proteinuria, tetanus toxoid immunization, supplementation and multi-micronutrient monitoring card, nutrition counselling and reproductive health. After all, the *Puskesmas* provides a certificate of health examination to a preconception woman to be taken to the Office of Religious Affairs (KUA).

Thirdly, the health team of the KUA conduct a course for prospective couples (*Suscatin*) with additional nutrition and reproductive health items. Socialization is given to the brides and grooms about

the importance of health screening at nearby *Puskesmas*.

The district chief (*Camat*) coordinates the implementation of integrated services to preconception women in district area, appeals to the *Lurah* to provide a letter of introduction to the brides and grooms for a health checkup at the *Puskesmas*, check the result of health examination of bride candidate from *Puskesmas*, appeal to the head of the District *PKK* (Family Welfare Development) to mobilize the *Posyandu* cadres to recruit and assist the preconceptions women to come to the health service at the *Puskesmas*.

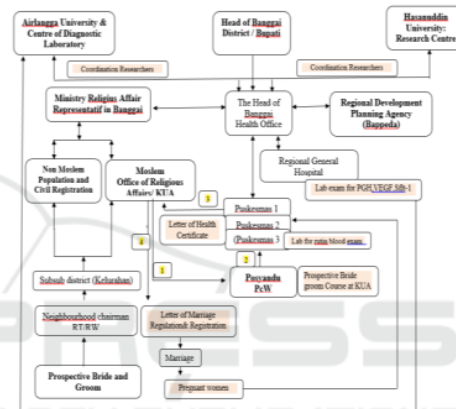


Figure 1: Schematic review of integrated multi sectoral stakeholder networks, comprehensive approaches, and interventions to improve the health of PcW in Banggai Regency.

The *PKK* (Family Welfare Development) cadres as volunteer of *Posyandu* mobilizes preconceptions women, motivate them to check their health to the *Puskesmas*, assist, and monitor the consumption of micro-nutrient capsules by the pregnant mothers.

1.3 Laboratory Examination

Laboratory examination such as pregnancy test is a test to determine the level of HCG (Human Chorionic Gonadotropin), an embryonic hormone produced during pregnancy that will increase in urine and blood a week after the conception. The examination of protein in the urine is to determine the levels of protein in it as an early sign of preeclampsia, a systemic disease of a pregnant mother which is characterized by the onset of hypertension and proteinuria.

Hemoglobin (Hb) examination is performed to detect anemia, examined in the preconception period, and during pregnancy (trimesters 1,2 and 3) as well as other routine blood tests such as leukocyte and erythrocyte examination and rate of sedimentation of blood (LED). Other laboratory examination is soluble fms-like tyrosine kinase-1 (Sflt1), Vascular Endothelial Growth Factors (VEGF) and Placental Growth Hormone (PGH).

1.4 Ultrasound Examination

Trans-abdominal fetal ultrasound biometry examination becomes an almost universal part of antenatal care in developing countries which is done two times, firstly at the second trimester of pregnancy (week 24) and secondly at the third trimester of pregnancy (week 38).

1.5 Maternal Placenta Assessment

Maternal placenta assessment includes placental weight, diameter, thickness and completeness. Placental weight has been shown to be closely correlated with birth weight in large studies.

2 METHOD

2.1 Design

The research was conducted in three districts of Banggai Regency, namely, Luwuk, North Luwuk, and South Luwuk, on Mei 2017. This was an analytical cross-sectional study which covered 12 future brides and grooms attending the one day training course started with a pre-test as well as educational material of reproductive health and nutrition and ended with a post-test.

2.2 Objective

The objective of this research was to know the level of knowledge of the prospective couples to the bride course (*Suscatin*) at the Office of Religious Affairs (KUA).

2.3 Population and Sample

The population was prospective couples who visited the Office of Religious Affairs (KUA) for regulation and registration of getting letter of marriage. The total sample was 12 subjects, with 6 subjects on each the case and control group using total sampling.

2.4 Statistical Analysis

To analyse the result, the data were compared before and after the course processed by T-test.

2.5 The Brides and Grooms Course (*Suscatin*)

The *Suscatin* started with a pre-test and finished with a post-test. This activity aimed to give information to the prospective couples (brides and grooms) about reproductive health, nutrition education, especially on the first 1000 days of life. The other aims of *Suscatin* were raising awareness of the importance of anthropometric examination including the measurement of body weight, height and upper arm circumference which was performed in the preconception period, in the 12, 20, and 38 weeks of gestation, hemoglobin (Hb) concentration, proteinuria, blood pressure and delivering multi-micronutrient (MMN) or iron folic acid (IFA) supplements. When they got pregnant, we followed up delivering MMN or placebo (IFA) supplements to be consumed once a day during the whole of their pregnancies. But when they did not get pregnant, MMN or placebo supplement had to be consumed once a week as recommended by the Ministry of Health (MoH) Regulation No.88 / 2014 on standard tablets to increase Hb for childbearing and pregnant women (MoH) Regulation No.88 / 2014).

2.6 Ethics Statement

The research received ethical approvals from Joint Ethics Committee, Hasanuddin Makassar University, Sulawesi Selatan, Indonesia.

3 RESULT

Age of most prospective brides and groom was 24 years (25%). Women living in rural areas in Indonesia are often married by the age before 20 years old because Marriage Law No. 1 Year 1975 allows women to get married at the age of 16.

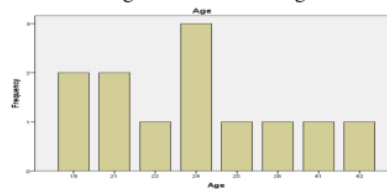


Figure 2: Age of most prospective bride and grooms.

Nowadays, people throughout the country have more freedom to choose their own partners than those living in the past. But rural families are generally more involved than urban families in the choice of their children's spouses, and men generally have somewhat more freedom in choosing their spouses than women have.

The educational level was based on the highest level attained according to the Indonesian system consisted six years of primary education, three years of Junior High School (JHS) and Senior High School (SHS), bachelor degree (S1), and postgraduate students (S2). This variable had seven categories. Education majority of the prospective couples as many as 66.7% was completed Senior High School, who was more knowledgeable about the materials given in KUA.

Knowledge of the first 1000 days of life can form a person's behaviour according to Roger's behaviour forming process; namely awareness, interest, evaluation, trial and adoption.

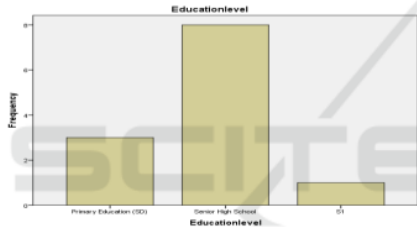


Figure 3: The educational level of most prospective brides and grooms.

Table 1: Bivariate analytic pre-test and post-test on prospective brides and grooms course at KUA.

No.	Knowledge	N	Mean \pm SD	p
1	Knowledge about nutritious food	12	0,583 \pm 0,514	0,02
2	Knowledge about the meaning of balanced nutrition	12	0,833 \pm 0,228	0,339
3	Knowledge about pillar of balanced nutrition	12	0,166 \pm 0,834	0,054
4	Knowledge about the First 1000 Day of Life	12	0,333 \pm 0,492	0,039

3.1 Knowledge about The Nutritious Food

Before having the course, there were 7 (58.3%) couples who mentioned the nutritious food as what

so called '4 healthy 5 perfect food' (carbohydrates, proteins, fats, vitamins and minerals); and after the course, all couples (12 couples (100%)) mentioned the nutritious food as balanced nutrition.

There was a significant difference between before and after course of the knowledge about nutritious food ($p=0.02$).

3.2 Knowledge about The Meaning of Balanced Nutrition

Before having the course, most 8 (66.7%) couples mentioned that the good nutrition was what so called '4 healthy 5 perfect food' (carbohydrates, proteins, fats, vitamins and minerals); and after having the course, most 8 (66.7%) couples mentioned that good nutrition sufficed all substantial nutrition, so that the body can maintain its function properly.

There was no significant difference between before and after course of the knowledge about balanced nutrition ($p=0,339$).

3.3 Knowledge about Pillars of Balanced Nutrition

Before having the course, most 9 (75%) couples mentioned the pillar of balanced nutrition as variation and portion of food according to requirement, hygiene, food safety, physical activity and sport, and monitoring ideal weight; and after the course, most 8 (66,7 %) couples mentioned the balanced nutrition pillar as the variation and the portion of food that were suitable with the needs, hygiene and food safety, physical activity and exercise, as well as monitoring ideal weight.

There was no significant difference between before and after course of the knowledge about pillars of balanced nutrition ($p=0,054$).

3.4 Knowledge about The First 1000 Days of Life

Before the course, 4 (33.3%) said the first 1000 days of life is a critical period of pregnancy and breastfeeding which is important for maternal nutrition improvement and after, the most 9 (75%) say the first 1000 days of life is a critical period of early life.

There was a significant difference between before and after course of the knowledge about the first 1000 days of life ($p=0,039$).

4 DISCUSSION

The majority of couples knew about the balanced nutrition which means getting enough information on nutrients such as carbohydrates, proteins, fats, vitamins and minerals for the body's purposes¹ in order to maintain its function properly. While the first 1000 days of¹ life, an early critical period of life is very important to improve the nutritional status of pregnant mothers and to prevent pregnancy complications which is not well known.

The knowledge about balanced nutrition and the four pillars of balanced nutrition can be influenced by several factors such as limited number of samples. This research was conducted on one day meeting only. Besides, majority of the sample were senior high school graduates and some of them were elementary school, only a few of them were bachelor degree (different educational background). The other factors were that they often had different socioeconomic and cultural backgrounds, the way to the delivery of the material, the audio visual clarity, and the motivation of the prospective couples to be aware and interested in the science delivered (Bérenghère de Negri, 1992).

⁹ Information, Education and Communication (IEC) activities can provide people to develop their personal knowledge, skills and confidence and to reconsider their attitudes, beliefs and behavior⁸. In an IEC, information are disseminated to individual or target groups by utilising appropriate media of communication with the aims of creating awareness as well as motivating and guiding education to adopt better health and family welfare measures (Sandeep, 2015).

⁵ Communication requires full understanding of behaviors associated with the sender and receiver and the possible barriers that are likely to exist. Health communication seeks to increase knowledge gain.

Many factors supporting the success of IEC were such as the knowledge, skills and experience of the communicator/implementer (health worker), and the environment where the IEC was being held.

Inhibiting factors in IEC included communicators who did not master the content of messages conveyed and were lack of experience. Message delivered was not clear because the voice was too low or too fast, so it was difficult to catch by the recipient, or submitted using a foreign language which was too difficult to understand by respondents. Other inhibiting factors of IEC were the media used which was not according to the topic of the problem. Knowledge of the communicants

was too low, so it was difficult to digest the too noisy message delivered so the message was not clear¹.

Nutritional status during preconception period is an important determinant that may affect the outcome of pregnancy. One of the causes of new born low birth weight is nutritional status of mothers before and during pregnancy (Sandeep, 2015). Multi-micronutrient supplementation given since preconception period was considered a feasible public health strategy in the areas with micronutrient deficiencies. It is supposable not only⁷ reduce maternal high-risk group but also to be potentially benefit for both mothers and their infants.

⁷ Preconception health services are health services for women of reproductive age, before the first pregnancy which is a public health strategy to improve women's health and reduce maternal and child mortality (Allen, 2005). By following the preconception health service, the mother-to-be will be able to get early identification of pregnancy risk factors, such as anaemia before pregnancy, identify and manage maternal conditions and behaviours during pregnancy which may pose a risk to both mother and new born.

Other activities were Information Education and Communication (IEC) that provide education materials of the importance of nutrition since the preconception period, conducting the anthropometric examination, pregnancy test, ultrasound examination (for the positive pregnancy test), and provision of MMN and blood sampling.

Educational intervention at KUA improved all components of knowledge influencing the behaviours in pregnant mothers, so that enhancement of knowledge, change of attitude and perceived behavioural control, positive impact on subjective norms, and behavioural intention ultimately resulted in the routine consumption of supplementation on pregnant mothers. Change of behaviour and adoption of a new idea or message do not occur spontaneously. The process is evolved through various stages. People usually move through intermediate steps in the change process. The transformation involves following stages: receiving information, processing/understanding the received information, changing the health behaviour, and finally maintaining it. (Sandeep, 2015). Regular IEC programs during preconception period bring desirable changes in health practices of PcW resulting in a healthy mother and baby.

Therefore, the preconception women services supposed to be a very important action, which was the part of Maternal and Child Health Service (MCH

or KIA) in Banggai district in accordance to reach the target of SDGs (Sustainable Development Goals) number 3 (good health and well-being), the unfinished agenda of MDG (Millennium Development Goals) number 4 (reducing child mortality), and 5 (improving maternal health) (Report of the Secretary-General, 2017).

Mother's nutritional status before conception (since being a prospective bride or before conception) and or during early pregnancy may influence pregnancy by affecting the process of critical development at the early weeks of and during pregnancy. Those are low birth weight, short birth length and under optimal brain growth.

Therefore, nutrition improvement programs should have been started before pregnancy including the increasing of nutrient intake and weight gain. Failure in well preparation for pregnancy will adversely affect the future development of the fetus. Good nutrition should flow throughout the life cycle and across generations.

The SDGs represented a window of opportunity for the global community to finally make good result on its many commitments to improve nutrition and health status of mother and child in Banggai district. By 2030, in accordance with the achievement of SDGs target, to end preventable infant and toddler deaths, it should be implemented. All of these actions are starting from the Office of Religious Affairs (KUA) to SDGs.

5 CONCLUSIONS

Integrated Post of PcW in Banggai District had become an innovative intervention by accelerating the improvement of the nutritional and health status of PcW in enhancing the knowledge of PcW on nutrition, reproductive health, and the importance of first 1000 days of life that could increase the health literacy status of PcW, the prevention and treatment of anaemia, monitoring of pregnancy complication including preeclampsia, and help reduce MMR. Hence, we need strong commitment, integrated multi sectoral stakeholder networks, comprehensive approaches, and interventions to improve the health of preconception women and to achieve mother and fetal welfare. In addition, it is also considered as the most important thing for governing fetal growth.

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