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**Impact of Family Planning Programs on Child Health
Gaza Strip, Palestine**

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Impact of Family Planning Programs on Child Health Gaza Strip, Palestine

A thesis

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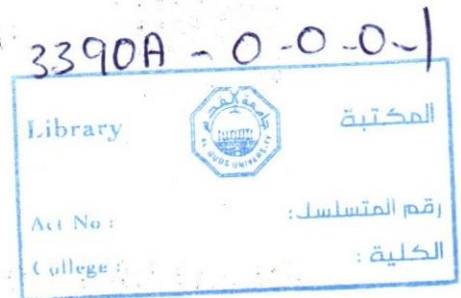
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

"وَالْوَالِدَاتُ يُرْضِعْنَ أَوْلَادَهُنَّ حَوْلَيْنِ كَامِلَيْنِ لِمَنْ أَرَادَ أَنْ
يُتِمَّ الرَّضَاعَةَ وَعَلَى الْمَوْلُودِ لَهُ رِزْقُهُنَّ وَكِسْوَتُهُنَّ
بِالْمَعْرُوفِ لَا تُكَلَّفُ نَفْسٌ إِلَّا وُسْعَهَا لَا تُضَارَّ وَالِدَةٌ
بِوَلَدِهَا وَلَا مَوْلُودٌ لَهُ بِوَلَدِهِ وَعَلَى الْوَارِثِ مِثْلُ ذَلِكَ فَإِنْ
أَرَادَا فِصَالًا عَنْ تَرَاضٍ مِنْهُمَا وَتَشَاوُرٍ فَلَا جُنَاحَ عَلَيْهِمَا
وَإِنْ أَرَدْتُمْ أَنْ تَسْتَرْضِعُوا أَوْلَادَكُمْ فَلَا جُنَاحَ عَلَيْكُمْ إِذَا
سَلَّمْتُمْ مَا عَاتَيْتُمْ بِالْمَعْرُوفِ وَاتَّقُوا اللَّهَ وَاعْلَمُوا أَنَّ اللَّهَ
بِمَا تَعْمَلُونَ بَصِيرٌ"

صدق الله العظيم

(٢٣٣-سورة البقرة)

DEDICATION

To
My Parents,
Wife
and
Children

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It is my pleasure to acknowledge all individuals concerned in this research. First of all, I am grateful to Dr. Yehia Abed and Dr. Bassam Abu-Hamad, my academic supervisors for their suggestions, patience and support. I am deeply indebted to them for the kind care, considerable time, effort, and advice that they willingly gave to help me. So, I will continuously appreciate their help for the rest of my life.

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Thank you

Abstract

The overall aim of the study was to identify the impact of the family planning programs implemented in the Gaza Strip on child health to help in providing suggestion for decision makers which could aid in improving the health situation in our home.

A cases-control study was conducted at four different setting in the Gaza Strip, Gaza city, Jaballia village, Al-Bureij camp and Dir Al-Balah camp. The study was carried out in the primary health centers of different health care providers including governmental, UNRWA and NGO's health centers. The study population constituted of 150 users of family planning and the same number of non-users with their children whom age range between 24 to 36 months.

Data was collected through a self-constructed questionnaire administered to subjects' mothers at the primary health center and also. Data was collected by observation of somatic characters of the children and applying physical examination. Certain variables were obtained from child health records. Response rate was 92.3% and non-responders were replaced.

The children of mothers practicing family planning are healthier, heavier and less exposed to accidents and neglect. Women usually practiced family planning after they had had many children. The children of users are enjoyed with breast-feeding for a longer period than the other group. The children of users have received health care more than children of non-users.

The study contributes in highlighting the importance of family planning practice towards the child health and providing hints for implementing strategies that could contribute in encouragement of practice of family planning

الخلاصة

تأثير برامج تنظيم الأسرة على صحة الطفل في قطاع غزة

هدف الدراسة

تهدف هذه الدراسة إلى قياس مدى تأثير برامج تنظيم الأسرة المقدمة من الجهات الصحية المختلفة على صحة الطفل في قطاع غزة وعليه تعتبر هذه الدراسة تقويمية لإظهار اوجه القوة وأيضاً الأوجه التي تحتاج إلى تحسين في الخدمات الصحية ذات العلاقة. وتساعد الدراسة صانعي القرار على اتخاذ الإجراءات اللازمة لتحسين تلك الخدمات.

طريقة البحث

لقد أجريت الدراسة على حالات وشواهد شملت مائة وخمسون طفلاً (بين سنتين وثلاث من العمر) أمهاتهم يمارسن وسائل تنظيم الأسرة، ومائة وخمسون طفلاً شاهداً لا يمارسن أمهاتهم أي وسيلة من تنظيم الأسرة.

وقد تمثل اختيار خدمات وزارة الصحة بإجراء الدراسة في عيادة شهداء الرمال في مدينة غزة وأيضاً عيادة شهداء جباليا في قرية جباليا. وخدمات وكالة الغوث باختيار عيادة معسكر دير البلح وأيضاً تم اختيار مركز صحة المرأة في معسكر البريج لتمثل خدمات المؤسسات غير الحكومية حيث تم الأخذ بعين الاعتبار أن الدراسة اشتملت على جميع الشرائح الاجتماعية في قطاع غزة من المدينة والقرية ومحيمات اللاجئين.

لقد تم اختيار عينة إرضائية لصعوبة أخذ عينة عشوائية حيث لم تكتمل بيانات الملفات الصحية لمستقبلي خدمات تنظيم الأسرة .

استخدم في جمع البيانات استبانات خاصة وقام بجمع البيانات الباحث وسيدات دربن خصيصاً على تعبئة الاستبانات وقد تم توقيع الكشف الطبي على الأطفال وأخذ بعض البيانات من ملف صحة الطفل الموجود في المركز الصحي. وقد كانت نسبة الاستجابة عالية جداً (٩٢,٣%) حيث تم استبدال الحالات الغير مستجيبة. استخدم في تحليل البيانات نظام الإحصاء Epi-info, SPSS كما تم استخدام مقاييس إحصائية متقدمه لثبات درجة مصداقية الاستبانات والبيانات الأخرى وقياس العلاقات بين المتغيرات. وهذه الأدوات الإحصائية هي:

Chi-square, t-test, Odds ratio

ملخص النتائج:

أظهرت الدراسة أن السيدات اللواتي يمارسن تنظيم الأسرة أصغر سناً من السيدات اللواتي لا يمارسن تنظيم الأسرة وأيضاً درجة خصوبة السيدات اللواتي يمارسن تنظيم الأسرة أعلى من الأخريات وهذا يدل على أن السيدات يمارسن تنظيم الأسرة متأخرات بعد أن تكون السيدة أنجبت العدد الذي ترغب فيه من الأطفال .

وكان من أهم النتائج :

-السيدات اللواتي لا يمارسن تنظيم الأسرة عانين من حالات الإجهاض ،ولادات ميتة أو فقدان طفل أو أكثر من الأخريات.

-السيدات اللواتي يمارسن تنظيم الأسرة يباعدن بين الحمولات أكثر من الأخريات .

-السيدات اللواتي يمارسن تنظيم الأسرة أقل معاناة من فقر الدم .

-أطفال السيدات اللواتي يمارسن تنظيم الأسرة أقل عرضة لنقص الوزن.

-السيدات اللواتي يمارسن تنظيم الأسرة يرضعن أطفالهن فترة أطول من الأخريات.

-أطفال السيدات اللواتي يمارسن تنظيم الأسرة أقل عرضة للإصابة بالتهابات التنفسية.

-أطفال السيدات اللواتي لا يمارسن تنظيم الأسرة يتعرضون لسوء المعاملة بالضرب أكثر.

الخلاصة:

أغلب الدراسات في مجال الصحة الإنجابية وتنظيم الأسرة تقيس التأثير على درجة الخصوبة أو وسائل تنظيم الأسرة أو مدى رضى المنتفعات، ولكن القليل من الدراسات قيمت تأثير خدمات تنظيم الأسرة على الصحة وخاصة صحة الأطفال ولقد أظهرت الدراسة أهمية تقييم خدمات تنظيم الأسرة على صحة الطفل حيث تبين تحسن صحة السيدات اللواتي يمارسن تنظيم الأسرة ولكن يجدر الإشارة إلى ضرورة الحذر عند التعامل مع نتائج الدراسة حيث أن العينة كانت غير عشوائية .

التوصيات:

-نتيجة للتأثيرات الإيجابية لبرامج تنظيم الأسرة على صحة الطفل . نوصي بأخذ الإجراءات

اللازمة حيال السيدات اللواتي لا يمارسن تنظيم الأسرة .

-استغلال وسائل الإعلام في تسويق خدمات تنظيم الأسرة لما لها من أثر إيجابي على صحة الأم والطفل.

-حث وتشجيع الأزواج على ممارسة تنظيم الأسرة مبكراً.

-يجب العمل على توحيد جميع سجلات صحة الطفل لمقدمي الخدمات الصحية المختلفة .

-أخذ الإجراءات اللازمة العلاجية والوقائية للأطفال ناقصي الوزن .

- يجب استمرار متابعة نمو أطفال بعد عمر الثلاث سنوات.
- تشجيع الرضاعة الطبيعية وخاصة الرضاعة حصرياً في الأربع شهور الأولى من عمر الطفل.
- يجب العمل على أخذ الإجراءات اللازمة الوقائية والعلاجية لفقر الدم عند الأطفال.
- تدريب وتطوير العاملين في مجال صحة المرأة والطفل وتنظيم الأسرة.
- تشجيع الأبحاث العلمية الخاصة بتنظيم الأسرة.

List of Abbreviations

- AIDS: Acquired ImmunoDeficiency Syndrome.
- CFTA: Culture and Free Thought Association.
- COCs: Combined Oral Contraceptive.
- DMPA: Depot Medroxy Progesterone Acetate.
- FP: Family Planning.
- GNP: Growth National Product.
- HMIS: Health Management Information System.
- ICPD: International Conference on Population and Development.
- IPPF: International Planned Parenthood Federation.
- IMR: Infant Mortality Rate.
- IUDs: Intra Uterine Device.
- KAP: Knowledge, Attitude and Practice.
- LAM: Lactational Amenorrhea Method.
- LBW: Low Birth Weight.
- MPH: Master Degree of Public Health.
- MoH: Ministry of Health.
- NFP: Natural Family Planning.
- NGO's: Non Governmental Organizations.
- PCBS: Palestinian Central Bureau of Statistics.
- Pap: Papanicolaou stain
- PHC: Primary Health Care.
- PLO: Palestinian Liberation Organization.
- PMA: Palestinian Monetary Authority.

PNA: Palestinian National Authority.

RH: Reproductive Health.

STD's: Sexually Transmitted Diseases.

TFR: Total Fertility Rate.

UNDP: United Nation of Development Program.

UNFPA: United Nations population Fund.

UNICEF: United Nations Children's Fund.

UNRWA: United Nations Relief and Works Agency.

USAID: United States Agency for International Development.

WHC: Women Health Center.

WHFPP: Women Health and Family Planning Program.

WHO: World Health organization.

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Chapter I

Introduction

Impact of family planning on health.

Impact of family planning program refers to effects as measured by changes in individuals' lives and wellbeing, improvement in health and declines in unwanted fertility (Foreit and Frejka, 1998). High fertility also implies poor reproductive status (Foreit and Frejka, 1998). The improvement in health that early family planning struggled for, were reduction in perinatal, infant and maternal morbidity and mortality (Frejka, 1998). Family planning programs were designed and organized to ameliorate hazardous pregnancies, as pregnancies of very young and of older woman, short interval between births, and unsafe abortions (Foreit and Frejka, 1998). Other threats to maternal and child health include decline in the duration of breast feeding which strengthens infant health and extends the period of postpartum infertility. So breast-feeding promotion included as part of postpartum family planning programs (Foreit and Frejka, 1998).

Many think that family planning is a population policy. Trying to reduce the population size which is considered the primary goal, while in reality the first concern should be the health of mothers and children (Bouzidi and Korte, 1990)

There is no doubt and it is now clear that the health and quality of life of people improve when they are able to decide the number of their children (Evans and Huezo, 1997). Sexual and reproductive health became one of the priorities of primary health care and to achieve reproductive health, couples must have access to the information and services necessary for healthy reproductive life (Evans and Huezo, 1997). Family planning services are an essential element of reproductive health care, that reduce population growth and has beneficial effects in terms of sustainable socioeconomic

development, but the focus of family planning activities should be on the welfare of individuals and their families. Women will remain the main focus of reproductive health activities since the burden of sexual and reproductive ill-health falls on women far more than on men. Family planning, in particular, has a significant impact on other element of reproductive health, especially those concerning safe motherhood and child survival. Some family planning organizations provide sexual and reproductive health services as treatment of sexually transmitted diseases (Evans and Huezo, 1997).

Using certain contraceptive methods, as condom not only help to avoid unwanted pregnancies but also protect against sexually transmitted diseases, so integrating reproductive health services into existing family planning programs benefit women and child health.

Family planning improves quality of women lives by decreasing mental and physical burden of having many children, too close together. It gives the women more opportunity and time for education, job and earning income. Each year an estimated 585,000 women die from the complication of pregnancy and during delivery (Reproductive health on line, 2001) which may leave children suffering lack of mother-care and health-care. Almost all of these deaths, (99%) occur in developing countries. In Asia, a woman chance of dying is 1 in 54, in Latin America, 1 in 73, in Africa, 1 in 20, while in northern Europe is 1 in 10,000. The 1990 World Summit for children called a reduction in maternal deaths by 50% in year 2000 (Grant, 1993). In Palestine maternal mortality rate was 37.3/100,000 in 1997 (MoH, 2001). Family planning is one of key strategies in the safe motherhood, it reduces maternal deaths and maternal morbidity, due to causes related to pregnancy and delivery it also could prevent most of the illegal abortion and its consequent complication. The risk of maternal deaths among those aged 15-19 years are three times as those aged 20-24 years, and five times for

those aged over 35 (Kassas, 1994). A child who misses his mother will suffer from emotional deprivation and lack mother-care with it is negative impact on his/her health.

When a woman comes to a family planning clinic to choose a suitable contraceptive method, she will be screened for contraindications and also for other diseases, check Blood pressure, pelvic examination, breast examination, urine analysis, some are screened for venereal diseases, as gonorrhea, syphilis, genital herpes, genital warts and AIDS; and even pap. smear is taken in doubt cases of cervical cancer.

Where fertility rates are high and also maternal mortality, either lowering fertility through providing family planning services or improving delivery care will help to reduce maternal mortalities (Barnett, 1994).

Over the last forty years there has been concern about rapid population growth and its negative impact on quality of life. In the Gaza Strip, family planning is one of significant components of the primary health care services. Family planning services are provided for couples helping them to control their fertility and improve their health and give them chance to take care of their children. Although assessing child health is important, studying impact of family planning on child health is rarely conducted. The focus of this study is to assess the impact of family planning services on child health.

The research will be conducted to reveal the difference in child health indicators between families practicing family planning and families do not.

Value and Justification of the study:

Since 1994, Palestinian National Authority carried out great efforts to improve the situation in the Gaza Strip and West Bank, especially after the partial withdrawal of Israeli military forces. Because of high fertility rate in the Gaza Strip and to improve the health of women and children. The ministry of Health initiated through European project at 1994 a reproductive health and family planning program services to reduce

population growth and slow down fertility and consequently it is beneficial effect on health status of women and children. After six years of implementation of the reproductive health and family planning program, these services require a sort of evaluation to assess its impact on child health. Although studies of family planning programs, methods, and satisfaction have been conducted worldwide, the issue of impact of family planning on health especially on child health has been rarely investigated in the Gaza Strip according to the best of my knowledge. Therefore, this research considers the impact of family planning on child health to disclose any implicit issues and to raise recommendations to convince policymakers of the utility of family planning program for social and economic progress in their countries. Child health and mother health is inseparable. When mothers practice family planning, the burden of pregnancy and delivery is removed and consequently their health are improved. Palestinian society has a unique character regarding family planning practice. Sex preference for sons is apparent among Palestinians, the value and respect of mothers is related to the number of boys they reproduce. By other meaning women power is reduced if they have many girls which, push husband to marry more in trial to have sons. As a defense mothers continue trying to have the boys even after seven girls resulting in increased fertility. It is not surprisingly to see a woman over 40 carrying a baby while she is pregnant. Also, the girls lose the better marriage chances as they get older. Accordingly, a tendency for early marriage increased fertility that interferes with family planning goals. Pressure of family member as the mother in law on women to reproduce is a unique characters of Arab society especially Palestinians. All the above mentioned factors interact together towards increased fertility and act as a barrier to family planning programs. Impact studies were considered necessary to convince policy-makers of the utility of family planning programs.

Overall aim:

To assess the impact of family planning program organized by the women health departments on child health among Gazans. The study aims to identify areas of strengths and areas of weakness encountered in the program and to provide suggestions for decision-makers and politicians.

Objectives:

- 1-To assess the impact of family planning program through comparing relevant health indices among children of families who practice family planning and other group who do not.
- 2- To recognize areas of strength and areas for improvement in the utilized program.
- 3- To determine indicators of children well-being like breast-feeding status, birth weights, growth and development as weight and height measurement and determination of age of sitting and walking.
- 4- To determine indicators of child morbidity such as prematurity, stillbirth, abortion, child missing, history of birth trauma, cyanosis and jaundice among study population. And through performing clinical examination to identify presence/absence of diseases. Also, to assess the mothers' abusive and neglectful behavior towards their children
- 5- To suggest solutions and recommendations for decision makers.

Research questions:

- 1-What is the impact of family planning program services on health status of children of families practicing family planning?
- 2-Does the family planning practices and spacing of pregnancies affect the birth weight of newborn?
- 3-Are the current weights and heights of children of mothers practicing family planning better than whom do not practice?

- 4-Have the children of mothers practicing family planning sat and walked before those of mothers who do not practice
- 5-Had the children of mothers practicing family planning get jaundice, cyanosed and/or subjected to birth trauma less frequently than those who do not?
- 6-Currently, have the children of mothers practicing family planning suffered a systemic disease and need health care less frequently than those who do not?
- 7-Are mothers practicing family planning breast-fed their children for a longer duration than mothers who do not?
- 8-Are there differences regarding mothers abusive and neglectful behaviors if they practice or do not practice family planning?
- 9-Have the mothers practicing family planning suffered abortion, stillbirth and/or child miss less frequently than those who do not practice?

Context of the study:

In this section the researcher will present background information about the Palestinian population, geography and demography, political, socioeconomic, health care, fertility and family planning and child health context among the Palestinians in the Gaza Strip.

Geography and Demography:

Gaza Strip is a narrow zone of land, bordered on the north and east by the green line, on the south by Egypt, and on the west by the Mediterranean Sea. The Gaza Strip is about 362 square kilometers (46 kilometer long and 5-12 kilometer wide). The attitude is 0-40 meters above Sea level and has a subtropical climate. The Gaza Strip is divided administratively into five governorates: North, Gaza, Midzone, Khan Younis and Rafah. There are four towns, fourteen villages and eight refugees' camps and a few thousands of Israeli live in isolated settlements (MoH, 1998) (Annex 1).

The total population living in the Gaza Strip is estimated at 1,138,126. The population density is very high (3,161/sq.km). The density is much higher in the refugees' camps (MoH, 2001). Seventeen percent of the population resides the north of Gaza, 37% in Gaza, 14% in Midzone, 20% in Khan Younis and 12% in Rafah. Seventy five percent of the total population of the Gaza Strip are refugees, 40% of them live in the camps (Abed, et al 1997).

In Palestine, the population is very young, where 46.9% is under 15 years (50.2% in the Gaza Strip). Age group less than 5 years forms 18.5% which is about one fifth of the total population (Annex, 2). There is gender predominance towards males up to the age 40-44 years, no gender predominance in age group 45-49 and after 50 gender predominance towards females (MoH, 2001). Women in the reproductive age group (15-49) constitute 33.8% of all females and 45.9% of all females are younger than 15 years (MoH, 1999).

The population growth has been dropped from 5.2% in 1995 to 3% in year 2000 in Palestine. It is similar to that of Syria and Lebanon. Dependency ratio was 112.8% for Gaza Strip in year 2000. It is the highest in the neighboring countries (Egypt: 67%, Jordan: 82%, Lebanon: 64% and in Syria 81%) (MoH, 2001). This means that workforces are reduced and increased burden is thrown on the remaining workers.

Political context:

Peace and stability enables the Palestinian National Authority (PNA) to deliver health services, especially for children. Meanwhile, restrictions on movements as a result of curfews, closure and division of lands act as a barrier to health services delivery, as happened nowadays. Palestinians are living in difficult and unstable area. At the beginning of the last century Palestine was under the Turkish Government after that under the British occupation. At 2nd November 1917 the British mandate gave Belfore

Declaration to Jewish. Israel has occupied most of Palestine territory in 1948. As a result of that Gaza Strip was under Egyptian administration and the West Bank was under Jordan administration. So, Israel created the refugees' problem by pushing the Palestinians to the neighboring countries, Gaza Strip and West Bank. Since that time UNRWA has provided free health services to the refugees. On 5th June 1967 all of Palestine has been occupied. Since 1993 and as a result of Oslo agreement between PLO and Israel, the Palestinian health authority took over the responsibilities of health services in the Gaza Strip and West Bank. Besides rapid population growth, lack of resources and being living at a small area with a high population density, as a result of settlement, confiscation, which erode the land and push the Palestinians into a small area. Which result in a low living standard and it is detrimental effect on health especially among children.

Socioeconomic context:

The economy in the Gaza Strip mainly depends on agriculture and employment inside Israel. In addition, International donors fund some projects. The economic situation is usually unstable especially after AL-Aqsa Intifada because of frequent closure and restriction of trade. The deteriorating economic situation, limited income and lack of work opportunities lead to low standard of living and inadequate health facilities. Poor families can not pay for health insurance or private fees. At these circumstances children dropped from school and are pushed for work at younger age. According to Palestinian Monetary Authority (PMA), the GNP per capita in Palestine decreased from 1,938 US\$ in 1998 to about 1,771 in 2000 (MoH, 2001). GNP per capita in the Gaza Strip is 1,119\$ US (MoH, 1999). The incidence of poverty in the Gaza Strip is 38% (Palestinian National Authority and United Nations Children's Fund, 2001).

Social, economic, educational and political factors are the major determinants of fertility. The fertility are lower among educated women than among non-educated. Children are considered as a source of social protection especially in the absence of social security. Woman status and power in Palestinian society is usually determined by the number of children she has especially sons (MoH, 1999). Traditional extended families are common in the Gaza Strip, and in certain localities. Some men may marry up to four hoping to have more sons to support their families or for fun. Also the sex preferences for sons increases the fertility. Educational levels and socioeconomic factors play a part towards fertility, where it's inversely proportional with fertility. It is worth mentioning here that the Israeli-Palestinian conflict and frequent wars resulting in many deaths, so families believe in having many children to cope with the political situation. The pressure of other family members on couples to reproduce more children. These factors play an important part in increased fertility and act as a barrier to persuade couples to slow down their fertility.

Health care context:

The Palestinian health care system is a mixture of providers. PNA through MoH and Military services, which is, considered the main provider of health services. MoH began to provide health services immediately after declaration of principle of peace in 1993 between Palestinian Liberation Organization (PLO) and Israel. The MoH is responsible for a significant portion of PHC, secondary health care, some tertiary care and purchases unavailable tertiary care (MoH, 1999). Ministry of Health operates about 43 primary health care centers in the Gaza Strip, which provide first line diagnostic, treatment and prevention facilities (MoH, 2001). In Palestine, the number of family planning clinics is increased from 97 clinics in 1997 to 175 clinics in 2000 (MoH,

2001). MoH provide family planning services through 14 clinics in the Gaza Strip (MoH, 2001).

UNRWA provides free of charge primary health care services for refugees. The aim of the health programs is protection, preservation and promotion of health status of Palestinian refugees consistent with WHO concepts. UNRWA clinics offer reproductive health services including family planning programs and preventive measures for children as vaccination as well as curative measures. UNRWA operates 17 health care centers in the Gaza Strip (MoH, 2001).

Non-Governmental Organizations (NGOs) operate 40 small primary health care centers in the Gaza Strip and provide family planning services through 10 clinics (MoH, 2001). The private sector, there are hundreds of private settings provide different health services such as medical specialties, laboratories, pharmacies and dental clinics (MoH, 2001).

Fertility and family planning context:

The total fertility rate for Palestinians in year 2000 was 4.31 (5.4 in the Gaza Strip and 3.8 in the West Bank). TFR is still high in Palestine where, in Jordan is 3.8 and Syria 3.7 at 1999, TFR in Lebanon is 2.5 in 1996 and in Egypt is 3.3 and Cyprus equals to 2 only at year 1997 (MoH, 2001). The total fertility rate has been reduced from 7.4 in 1994 to 5.58 in 1998 and 4.31 in year 2000, this drop could be resulted from implementation of family planning services by Ministry of Health (MoH, 2001). Age specific fertility rate is maximum in age group 20-24 in 1995 and shifted to age group 25-29 in 1998 (MoH, 1998). Fertility rate is lower among educated women than among less educated. Women's knowledge of contraceptive methods is high (over 98%) the use of any contraceptive method among currently married women in child bearing age is 45.7% (50.7% in the West Bank and 34% in the Gaza Strip). However, the national

contraceptive use rate for modern methods is only 31%. The most popular method is IUD (38%) followed by pills (25%) (MoH, 1999).

MoH provides reproductive health/family planning services through 14 primary health care centers (MoH, 2001). The activities was started in 1994, and considered one component of community health. At year 2000 there were 41 family planning clinics in the Gaza Strip, MoH operates 14 clinics, UNRWA operates 17 clinics and NGOs operates 10 clinics (MoH, 2001).

Palestinian National Health Plan (1994) calls to integrate family planning services within context of primary health care. It clarifies political commitment at policy maker level and social acceptance for family planning services (Aghabekian and Khatib 1998).

Child health context:

The crude birth rate declined from 46.5/1000 population in 1995 to 33.2/1000 population in 2000 in Palestine, (MoH, 2001). The birth rate in Palestine is higher than in neighboring countries except Jordan where the birth rate is 38/1000 (MoH, 1999).

The overall infant mortality rate in the Gaza Strip and West Bank in year 2000 was estimated 22/1000 (MoH, 2001). Stillbirth is 5.2/1000 (MoH, 2001).

Child Health Directorate in the Gaza Strip has been established by MOH to coordinate, facilitate and participate in the meetings to develop a National program for Palestinian children. It also coordinates the activities with PHC directorate, coordinate with Women Health Department to implement programs for nutrition, breast-feeding, family planning and antenatal care (MoH, 1998).

The main cause of infant mortality is prematurity (18%), followed by congenital anomalies (13%) (MoH, 1998). In general, IMR is increased for infants of mothers aged less than 20 years and more than 35, also IMR reduced with increased years of

education of mother but the above 2 factors are not studied in Palestine (MoH, 2001).

In Palestine 2000, the leading causes of death in age group 1-4 years are accidents (23.3%) and respiratory diseases (13.7%). IMR rises steadily with LBW infants below 2.5 kg (MoH, 2001). The weight of babies measured in the Gaza Strip show little difference by residence (City, camp or village). Immunization statistics from 1997, MoH shows coverage over 95% for all vaccine preventable diseases (PCBS, 2000).

Childcare has two related goals, improving child health and preventing child death.

Child mortalities are reduced by prevention of pregnancy among women who have four or more children, prevention of pregnancy among women less than 18 years, older than 35 and by birth spacing, which will be achieved by family planning services (WHO, 2001). Every couples who wish to avoid pregnancy but are not using contraceptive, due to lack of family planning services, if their needs are met, will avoid death of 850,000 children less than five years per year worldwide (WHO, 2001).

Definitions:

*WHO defined health as "a state of complete physical, mental, and social well being and not merely the absence of disease or infirmity" (Beaglehole, Bonita and Kjellstrom 1993).

*Reproductive health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes (Evans and Huezo, 1997).

*WHO defined family planning as:

"It is practices that help the individuals or couples to obtain certain objectives, to avoid unwanted births, to bring about wanted births, to regulate the intervals between the pregnancies, to regulate the time at which births occur and number of children in the family" (Mousa, 2000).

- *The term fertility usually refers to the "Total Fertility Rate, or TFR, meaning the average number of children a woman will have in her life time (United Nations Population Fund, 1997).
- *Parity: State of having given birth to an infant of 500 grams or more, whether alive or stillborn; multiple births are one parous delivery (Dickason, Schult and Silverman, 1990).
- *Maternal mortality rate "The number of maternal deaths per 100,000 live births (Center for Disease Control, 2002).
- *The population growth rate, or more accurately the rate of natural increase, is most easily understood as the difference between birth rates and death rates. A population in which there are 35 births and 10 death per 1000 population each year is growing at a rate of 25 people per 1000 or 2.5 percent. Another way of understanding population growth rates is in term of doubling time, the time it would take for a population to double at the current rate of growth. A population growing at a rate of 2.5% would double in size in a bout 28 years "rule of 70" (UNFPA, 1997).
- *An older woman is defined as those over 35 years of age (Evans and Huezo, 1997).
- *Birth rate is calculated by dividing the number of live births in a population in a year by the midyear resident population (Center for Disease Control, 2002).
- *Abortion: Termination of pregnancy when the fetus weighs less than 500 grams or loss of pregnancy before 20 weeks from last menstrual period (Dickason, Schult and Silverman, 1990). Although abortion is defined as termination of pregnancy before 28 weeks gestation as stated by the director of obstetric department in Shifa Hospital Gaza (Personal communication), the operational definition of abortion in this study was as reported by women regardless of weeks of pregnancy.

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*A fetal death is the number of fetal deaths with stated or presumed gestation of 20 weeks or more divided by the sum of live births plus fetal deaths, stated per 1,000 live births (Center for Disease Control, 2002).

*Stillborn: Fetus, over 20 weeks' gestation, born without life (Dickason, Schult and Silverman, 1990).

*A neonatal mortality rate is the number of deaths of infants under 28 days of age, per 1,000 live births (Center for Disease Control, 2002).

*A postneonatal mortality rate is the number of deaths of infants that occur between 28 days and 365 days after birth, per 1000 live births (Center for Disease Control, 2002).

*Infant mortality rate is the number of deaths under one year of age in a year x 1000 divided by total number of live births in the same year (Beaglehole, Bonita and Kjellstrom, 1993).

*Low birth weight: a birth weight of less than 2,500 gram (Hutchison and Cockburn 1986).

*Prematurity: A low birth weight due to a short gestational period (Hutchison and Cockburn 1986).

*Light for date: A birth weight, which is significantly below the mean for gestational age (Hutchison and Cockburn 1986).

*Preterm: Infant born up through 37 completed weeks of gestation (Dickason, Schult and Silverman, 1990)

*Term infant: Live baby born after 38 to 42 weeks' gestation (from time of last menstrual period). Syn., full-term infant (Dickason, Schult and Silverman, 1990).

*Growth and Development: Growth is the gradual increase in size of the body and its organs. Development is the increase in the number of skills performed by the body, including the brain, and in the performance of those skills (WHO, 1986).

*Weight/age: Formulas for approximate average weight of normal children aged 1-6 years equal to age (yr.) x 2 + 8 kg. So, the expected average weight of a child aged 2 years is 12 kg. & 3 years is 14 kg. (Needlman, 1996).

*Height/age: Formulas for approximate average height of normal children aged 2-12 years equal to age (yr.) x 6 + 77 Cm. So, the expected average height of a child aged 2 years is 89 Cm. & for a child 3 years is 95 Cm (Needlman, 1996).

*Exclusive breastfeeding: MoH encourage breast-feeding exclusively for the first four months postpartum, a policy that has a basis in regional research on infant growth pattern (Palestinian Central Bureau of Statistics-PCBS, 2000).

*Locality: A permanently inhabited place, with an independent municipal administration or other type of adopted administration (PCBS, 1999).

*Definition of anemia: The Center of Disease Control (CDC) defined anemia of pregnancy as less than 11gm/dl. in the first and third trimester, and less than 10.5 gm/dl. in the second trimester (Cunningham, et al 1994).

Dependency ratio: Is the number of persons below 15 years and above 65 per 100/ persons aged (15-64 years) (MoH, 2001).

Chapter II

Literature review

Definition of reproductive health

Reproductive health implies that: *"People are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so"* (Evans and Huezo, 1997). Implicit in this condition are the right of women and men to be informed and to have access to acceptable, affordable, effective and safe methods of family planning of their choice. And other methods of their choice for regulation of fertility which are not against the law. Also, the right access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant (Evans and Huezo, 1997). In line with the above definition of reproductive health, reproductive health care is defined as: *"The constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems"* (Evans and Huezo, 1997). It also includes sexual health, the purpose of which is the enhancement of life and personal relations and not merely counselling and care related to reproduction and sexually transmitted diseases (Evans and Huezo, 1997).

There is inter-relationship among various aspects of reproductive health and every element can positively or negatively affects the others. Family planning is fundamental to other components of reproductive health.

Historical development of family planning in reproductive health.

In 1950 India established the first national family planning program (Ross and Mauldin, 1994). In 1958, Ford Foundation supported the research in human reproduction. The

General Assembly of the United Nations called on the entire United Nations system to develop facilities for training, research, information and advisory services in the population field. In 1965 WHO's family health division, established Human Reproduction Unit. In 1968 Tehran Proclamation of the United Nations Conference on Human Rights approved that information on and access to family planning were basic human rights (Diczfalusy, et al 1994). The United Nations Population Fund (UNFPA) began operations in 1969 and has three program areas: reproductive health including family planning and sexual health, population and development strategies and advocacy (UNFPA, 2002). In 1972 foundation of WHO's special program, of research, development and in human reproduction was established. In 1980s, over 120 governments were supporting family planning programs. In 1992 the Population council and International Parenthood Federation were established. Reproductive health is important not only at individual and family levels but also in societies and countries. The pillars of reproductive health are family planning, maternal and child health and prevention of sexually transmitted diseases (Diczfalusy, et al 1994).

The right to reproductive health has been affirmed and strengthened in successive International Conferences, particularly at the 1994 International Conference on Population and development in Cairo as well as at the Forth World Conference on Women "Beijing, 1995" (United Nations Population Fund, 1998).

In Palestine, UNRWA started to offer family planning services on demand since 1963. Palestinian health plan (1994) calls to integrate family planning services within context of primary health care (Aghabekian and Khatib, 1998). Currently, family planning services is offered for all Palestinian women and supplied by all health providers.

Women health:

The well being of children arises from the well being of their mothers.

The correlation between the well being of mothers and the well being of children is clear and absolute (Save the Children, 2000).

Women health and family planning:

Improvement of woman status, education, economic facilities and quality of life will change the mentality of woman towards acceptance the use of contraception. On contrary, ignorance, poverty and early marriage as in some parts of Africa and south Asia decrease the woman status and increase the fertility rates and it's bad impact on families and community health. If fertility remains at the current rates worldwide, global population will double in 43 years (WHO, 2001).

Family planning is one of the most effective and least expensive ways of improving the quality of life, the benefits of family planning could save the lives of women who die from causes related to pregnancy, and could also prevent the disabilities related to pregnancy. Family planning could prevent most of the illegal abortions and it's subsequent complications, improves quality of women lives by decreasing mental and physical burden of having many children, too close together, or at too early, or too late. It gives the women more opportunity and time for education, employment and earning income. The use of modern contraceptive can lead to improvement of maternal and infant wellbeing and survival rates. In those countries where women are least likely to use modern contraception, maternal mortality is high and the contrary is true. In Burkino faso, 4% of women use contraception, the lifetime risk of maternal death is one in 14, but in Brazil it is one in 130, because 75% of women use birth control. Every minute of every day a tragedy of mother dies as a result of pregnancy and childbirth

complication and leaves behind her child or more without mother care. (Save the Children, 2000).

Marital age:

The marriage of young girls is a behavioral tradition in Arab countries especially, in rural areas. An infant born to very young woman before 18 years of age is likely to be small for date or born too early than an infant born for mother between 25 –34 years old. Postponing first birth until women exceed 18 years of age may decrease the risk of death for first born by 20% (WHO, 2001).

The mortality among women age 10-14 years as a result of pregnancy and delivery increased by five times more than women aged 20-24 (Alzabi, 1995). Young married women have reduced opportunities for education, less job chances and carry out the responsibility of children early while they are still children.

The average age of marriage in Yemen is 15.8 years, in Mauritania is 16 and in Egypt is 17 years. So it is not surprisingly that maternal mortality rate in Yemen is 1000/100,000 (Farah and Ghonayal, 1994) and infant mortality rate in the same country is 110/1000 at 1991 (Grant, 1993). The average age of marriage is increasing to 21.3 years in Arab countries as a result of improvement of educational programs (Alzabi, 1995). In Palestine 37% of women married before the age 17 years (Aghabekian and Khatib, 1998).

Fertility rates:

Total fertility rate (TFR) is the average number of children the women have in their lifetime (United Nations Population Fund, 1997). Literature shows a relationship between increased fertility and infant mortality rate. Two studies were conducted and confirm this finding. The first study was conducted in Bangladesh found that infant mortality rate for mothers having 5-6 children was three times the rate of those with

only two children. The second was conducted in Egypt found that infant mortality rate higher among fifth and subsequent births than among third and fourth births by 38%. This higher risk may attributed to older mother, rare resources and susceptibility to infectious diseases (WHO, 2001). The total fertility rate for Palestinians has been discussed in the previous chapter.

Place of delivery:

Place of delivery and trained health professionals usually affect the outcome of births. Two countries will clarify this point. As reported in the state of mothers 2000 that less than half of births are attended by trained personnel in Yemen, where virtually all births are attended by trained personnel in Australia. The infant mortality rate was 76/1000 in the former and 5/1000 in the latter (Save the Children, 2000). Although, attending births by well-trained personnel is only one of the contributing factors for child health. Some 95% of births are attended by trained health care personnel in Palestine (PNA and UNICEF, 2001). Deliveries took place in hospitals constitute 77.5% while out side hospitals 22.5%. Delivery in the UNRWA clinics occurred in 12.4% and at home occur in 2.1% in the Gaza Strip (MoH, 2001). In the Gaza Strip a study was conducted at 1997 revealed that 43.1% of women delivered at hospital, 10.2% at UNRWA clinics, 7.1% at private hospital, 36.2% at private clinic and 3.3% delivered at home (Abed, et al 1997). Worth mentioning here that infant mortality rate in Palestine is 22/1000 (MoH, 2001).

Delivery status:

Most birth trauma is associated with difficult delivery. The injury may be mild as soft tissue swelling or severe as intracranial bleeding and spinal cord injuries (Thilo and Rosenberg, 1999). The route of delivery may also play a role in developing respiratory

distress in the newborn. The newborn may have respiratory distress following caesarian section due to retained fluid (Thilo and Rosenberg, 1999), known as wet lungs.

Abortion and family planning:

Vaginal bleeding occurs approximately in 50% of all pregnancies. Spontaneous abortion is the termination of pregnancy or the expulsion of the products of conception that weight less than 500 gm or not viable. Spontaneous abortion occurs in about 30% of all pregnancies. Most spontaneous abortion occurs before 16 weeks, but may occur in the second trimester (May and Mahlmeister, 1994).

International Conference on Population and Development (ICPD) agreed that abortion should not be promoted as a method of family planning, expanding and improving family planning services reduce abortion (UNFPA, 1998).

Anemia and pregnancy:

Women are liable to have anemia during pregnancy because they have higher requirements of iron and folate (Fleming, 1988), in addition to the increased plasma volume reaching a peak during the third trimester, which is about 45% or 1250 ml above non-pregnant values (Letsky and Redman, 1988). Also low socioeconomic status and reduced delivery of nutritious diet are contributing factors.

The role of anemia during pregnancy and the development of prematurity are controversial (Arafa, et al 1998). Meanwhile, prematurity is still the leading cause of perinatal and postnatal mortality and morbidity especially in developing countries where facilities are limited (Arafa, et al 1998).

Maternal anemia is also associated with increased susceptibility to development of iron deficiency anemia in the child (Huchinson and Cockburn, 1986).

Females are prone to have anemia because of menstruation and the load of pregnancy especially in developing countries. It is clear that anemia is usually more prevalent

among women of high fertility and those having short spaced pregnancies. The prevalence of anemia among Palestinian pregnant women is 55% (MoH, 2001). A study was conducted in Egypt has indicated an anemia level among pregnant women of 73.5% (Arafa, et al 1998).

Common systemic diseases and pregnancy:

When mothers are healthy, it is more likely that their children are healthy. Similarly, when a pregnant woman get a disease, so does her baby. Many diseases are transmitted from pregnant woman to her baby as Toxoplasmosis, Rubella, Cytomegalvirus and Herpes viruses. Some infections transmitted via vertical infection from mother to baby such as viral hepatitis and Human Immunodeficiency Virus (Thilo and Rosenberg, 1999). Some endocrine disorders of the mother like diabetes mellitus, may affect adversely the fetus with consequent delivery of large baby known as Infant of Diabetic Mother (IDM). Diabetes may be the most common pathological condition that affects the infant and the women. Gestational diabetes (GDM) is the term restricted to pregnant women in whom onset of diabetes occurs during pregnancy. GDM complicates 1%-12% of all pregnancies. Infants of diabetic mother (IDM) with uncontrolled blood sugar were at elevated risk of perinatal mortality and morbidity (Mustafa and Sandhu, 1998). IDM develop hypoglycemia as a result of hyperinsulinemia induced by maternal and fetal hyperglycemia. These infants are at increased risk of birth trauma (Thilo and Rosenberg, 1999).

Child health:

In addition to maternal, social and other benefits of family planning, child health remains of prime importance.

Child health and family planning:

Family planning improves health of children and give chance for children to have access to good housing, clothing, adequate food and education opportunities (WHO, 2001). Family planning improve child wellbeing, help child survival. About 11 million children less than 5 years die in developing countries each year, 25% of these deaths can be prevented by family planning services, by spacing births, helping parents to have the desired number of children. In Yemen, infant mortality rate 76/1000 because less than half of births are born by help of trained health professionals while in Australia this figure drop to 5/1000 because virtually all births are attended by trained personnel (Save the Children, 2000).

The first factor is short birth intervals, which has a negative effect on the coming infant and preceding child. When the birth spacing is less than two years, particularly less than 18 months, the chance of premature or low birth weight infant is high. Also when birth spacing is less than 2 years, the chance of dying before age of five years increases by 50% and death of an infant before one year is 60 – 70% (WHO, 2001).

On the other hand, when lactating mother get pregnancy, the chance of breast-feeding and the mother care for the present baby is reduced. The second factor to decrease child deaths is delaying first births till the mother exceeds her 18 birthdays. An infant born to very young woman before 18 years of age is likely to be small for date or born too early than an infant born for mother between 25 –34 years old. Postponing first birth until women exceed 18 years of age may decrease the risk of death for first born by 20% (WHO, 2001).

The third factor that may help in reducing child deaths, is prevention of births among women having four or more children. A study was conducted in Bangladesh found that infant mortality rate for mothers having 5 – 6 children was three times the rate of those with only two children (WHO, 2001).

Another study was conducted in Egypt found that infant mortality rate higher among fifth and subsequent births than among third and fourth births by 38%, this higher risk may attributed to older mother, rare resources and susceptibility to infectious diseases (WHO, 2001).

Child health (well-being) indicators:

Birth weight:

The appropriate birth weight may be considered as one of child well-being indicator. When the birth weight and gestational age are plotted on an appropriate standard, the infant weight may be appropriate for gestational age (AGA infants), small for gestational age (SGA infants) or large for gestational age (LGA infants). Many factors affect birth weight gestational age distribution as nutritional level, smoking, drug use, race and altitude. Preterm infants have increased morbidity and mortality, they are more susceptible for respiratory distress. A diabetic mother (IDM) may deliver LGA infants, and they are at risk for birth trauma, hyperbilirubinemia, hypoglycemia and congenital anomalies (Thilo and Rosenberg, 1999). Low birth weight baby (LBW) is a risk factor for sudden infant death syndrome (Larsen, et al 1999).

The average weight for normal newborn at birth is 3,25 kg. (Needlman, 1996) and a birth weight of less than 2,500g. is regarded as a low birth weight (Hutchison and Cockburn, 1986).

Family planning has a positive impact on birth weight as literature shows. When the birth spacing is less than 2 years, particularly less than 18 months, the chance of low birth weight or premature is high. An infant born to very young woman before 18 years of age is likely to be small for date (WHO, 2001). Not only maternal age is responsible for low birth weight but also maternal pre-pregnancy weight, poor weight gain and low socioeconomic status as stated above (Kaplan and Mammel, 1999).

The infants of low birth weight constituted 19% in Yemen, 15% in Iraq, 10% in Egypt, 7% in Jordan, 10% in Lebanon and 7% in Israel at year 1990 (Grant, 1993), while it was 6% in Palestine at 1995 (Gabr, 1998).

Growth and development:

In the pediatric endocrine clinic, disturbances of growth and development are the most common presenting complaints (Goltin, et al 1999). **Growth** is defined as the gradual increase in size of the body and its organs (WHO, 1986). By age 2, the weight gain of 2-3 kg/year and a height gain of 5-7.5 cm/year where, the child has attained nearly 50% of adult height (Hagerman, 1999). Growth is a process rather than a static quality (Needlman, 1996). Growth deficiency (failure to thrive) is "a deceleration of growth velocity resulting in crossing two major percentile lines on the growth chart". Growth deficiency prevalence is 8% of the pediatric population (Brayden and Headley, 1999). Growth deficiency is classified into 3 types, in type 1 the head circumference (HC) is preserved while the weight is depressed more than height. In type 11, normal HC and proportionate reduction of weight and height while, in type 3 all three parameters are reduced (Brayden and Headley, 1999).

A survey was conducted at 1996 in the Gaza Strip revealed that 3.7% of children were wasted and 8.2% were stunted (PCBS, 2000). PCBS (1996) revealed that 5.2% of children less than 5 years were wasted (MoH, 1999). A community based survey conducted out in 1995 by Terre Dess Homes in the Gaza Strip revealed that 15.1% of the children less than 5 years were of low weight/age (wasted) and 14.2% were of low height/age (stunted) (MoH, 1999).

Growth chart is the most sensitive tool to assess growth and growth assessment constitutes an essential component of pediatric health surveillance (Needlman, 1996).

The standard growth charts are weight/age, height/age (Annex, 3 for boys and annex, 4

for girls), weight/height and head circumference/age for boys and girls. The growth chart is composed of 7 percentile lines, 95th, 90th, 75th, 50th, 25th, 10th and 5th percentile (Needlman, 1996). The 50th percentile is the median (standard value), the value above which 50% of the observed values fall and the value below also 50% of the observed value. Most consider the diagnosis of failure to thrive if the child weight is less than 5th percentile or drops more than 2 percentile lines (Needlman, 1996). Reduction of weight/age and weight/height (wasting) resulted from acute malnutrition. If caloric deprivation occur over several months, height/age also drops (stunting) (Needlman, 1996).

Severity of malnutrition is expressed in percentage of the standard (median), when parameters of growth is less than 5th percentile, consequently it is graded mild, moderate and severe. Wasting is considered mild when weight/age lies between 75-90% of the median and severe when less than 60% of median. Also, stunting considered mild when height/age lies between 90-95% and severe when less than 85% (Needlman, 1996), (Annex, 5).

Development is defined as the increase in the number of skills performed by the body, including the brain, and in the performance of those skills (WHO, 1986).

Sitting and walking age is a developmental child indicator and represent the changes in gross motor skills. Sitting alone (without support) occurs at 6 months of age while crawling occurs at 7-10 months. The child walks independently at 12 months of age and the range of walking age is 9-17 months (Hagerman, 1999).

Breast-feeding status:

The role of breast-feeding in infant nutrition, survival and birth spacing has been recognized around the world.

It is estimated that promotion of breast-feeding may save one million infants each year in developing countries (Kamel, et al 1997).

Breast-feeding is an essential part of reproductive process where during the post-partum period the breast replaces the placenta in its nutritional role (Evans and Huezo, 1997).

Breast-feeding is considered one of the most important influences on child health worldwide. Because it provides a suitable and optimal nutrition for the normal baby especially in the first months of life. Breast-feeding is protective against infections through providing the baby with immunoglobulins. Moreover allergic diseases are less among breast-fed babies (Krebs and Hambidge, 1999). Breast-feeding strengthen the relationship between the mother and her baby. It's necessary for development and psychological satisfaction of the baby. Suckling has an inhibitory effect on the hypothalamic-pituitary-ovarian axis which, may lead to amenorrhea and infertility (Evans and Huezo, 1997).

As stated above, the breast-feeding has a role also in family planning practice through inducing lactational amenorrhea (LAM). But a woman not using LAM if the baby gets substantial food other than breast milk or the mothers' menstrual periods return or the baby reaches 6 month of age. (WHO, 1997). LAM is an effective and reliable method of birth control, but the mother is advised to use a complementary FP method if after more than 8 weeks postpartum menstruation has return or the baby is more than 6 months (WHO, 1998). Accordingly, the MoH promote exclusive breast-feeding for the first 4 months post-partum (PCBS, 2000). A research was conducted in Alexandria at 1997 recommended that no food or drink should be given before 4-6 months, any supplement given can interfere with breast-feeding (Kamel, et al 1997). The practice of exclusive breast-feeding in Egypt was estimated to be 38% and in Jordan, 32% (Grant, 1993).

Child morbidity indicators:**Anemia:**

Iron Deficiency Anemia (IDA) is a serious worldwide public health problem. In the countries of the Eastern Mediterranean Region the prevalence of anemia in preschool children lies between 20-60% (Verster and Van, 1995). The child aged 6-36 months is considered to be anemic if his hemoglobin drops below 11gm/dl (United Nations Relief and Work Agency, 2000).

UNRWA conducted a study in 1998 to determine the prevalence of anemia among children 0-3 years. In certain countries revealed important findings, were 74.9%, 49.7%, 35.9%, 29.6% and 28% of children in Gaza Strip, West Bank, Jordan, Lebanon and Syria respectively are anemic (UNRWA, 2000). The prevalence of anemic children in the Gaza Strip is still the highest among the surrounding countries. Anemia prevalence among children is exceeding 70% in the Gaza Strip with highest prevalence among the under 2 years population (MoH, 1999).

Jaundice at birth:

Jaundice is a common neonatal problem. Premature babies are more liable to develop jaundice more than full-term infants. Moreover, sixty five percent of newborns develop clinical jaundice with a bilirubin level below 5 mg./dl during the first week of life (Thilo and Rosenberg, 1999). Some children develop physiological jaundice on the second or third day of life and the icterus fades in 7-10 days (Hutchinson and Cockburn, 1986). Jaundice develop in the first 24 hours is considered pathological and should be evaluated (Thilo and Rosenberg, 1999).

Respiratory diseases:

A recognized fact that around 15 million deaths occur each year in developing countries among children under 5 years. Nearly 5 million of these deaths are resulted from Acute

Respiratory Infection (ARI). Moreover, ARI account for 37% of all children deaths in Egypt in 1987 (Khallaf and Lamb, 1991). There is a seasonal variation in ARI morbidity and mortality. An Egyptian child can expect to have from 5 to 8 ARI episodes each year and ARI cause 70% of visits to the pediatric outpatient (Khallaf and Lamb, 1991).

PCBS reported a prevalence rate of Acute Respiratory Infection (ARI) at 25.4% among children under 5 years old (MoH, 1999). Pneumonia and other respiratory diseases is the second leading cause of death in the age group 1-4 years (MoH, 2001).

Approximately seven percent of children suffered some type of chronic disorders of the lower respiratory system (Larsen, et al 1999). A study was conducted in Egypt revealed that bronchial asthma has been estimated to affect up to 8% of children (Bassili, et al 1998).

Alimentary tract disorders:

Diarrheal diseases prevalence was 13.2% among children under 5 years, according to PCBS report (MoH, 1999).

Child abuse and neglect:

The Palestinian Declaration of Independence of 15 November 1988 stated in the article 29 (4) that *"The law prohibits exposing children to beating or harsh treatment by their parents"* (Ministry of Information and United Nations Children's Fund, 2000).

The child abuse and neglect is a growing problem that necessitates child protection. The data available suggest that 1-1.5% of American children are abused or neglected annually. Child abuse has multi-factorial influences like individual, family, social and psychological that work together to contribute to the problem (Krugman and Sirotnak 1999).

Emotional abuse has been recognized as ignoring, rejection or cursing. A study was conducted in Alexandria showed that 27.1% of mothers cursed the day the child was born (Atta and Youssef, 1998).

Physical abuse of children ranges from mild beating, moderate beating of the child with a stick to severe beating, which left bruises fractures or injuries. Putting pepper in the mouth of the child and burning the child with hot water is another form of physical abuse. A previous study carried out in Alexandria revealed that 45.2% of mothers beat their children with stick or a belt (Atta and Youssef, 1998).

Physical neglect which, is the inability to provide a safe environment, necessary food, shelter and clothing in which the child can grow (Krugman and Sirotnak, 1999). The previous Alexandria study reported that 9% of women leave their children playing barefooted in the street. Another examples of physical neglect are, injury of the child by falling down in the presence of mother. Samba and Bwibo observed the relationship between practicing family planning and mothers' abusive behaviors towards their children. Mothers who maltreated their children were less likely to practice family planning (Atta and Youssef, 1998). It is stated that *"Family planning activities appear to be an effective tool in reducing the risk of child maltreatment by timing pregnancies in relation to the mother's age"* (Atta and Youssef, 1998).

Global overview about reproductive health.

Asia:

The Asian context of family planning services was often developed independently from health services in programs supported by economic and demographic rationales. High population density of Asia was the stimulus for the first family planning programs (Miller, Fisher and Askew, 1998).

China:

The platform for action of the Fourth World Conference on Women held in Beijing in September 1995 called for universal access to quality health services by the year 2015 and reductions of maternal mortality; the sharing responsibility between men and women in matters relating to sexual and reproductive behavior; the granting of equal land, credit and employment access to women; the establishment of effective personal and political rights; and the education of girls and young women as the key intervention for the empowerment of women. Also elimination of all forms of discrimination against women and girls; the removal of all obstacles to gender equality and women's employment; the participation of women in all aspect of decision-making and power structure; and the review of laws punishing women who have undergone illegal abortion (UNFPA, 1997).

India:

In the early 1950s Indian established the first national family planning program. National leaders responded chiefly by promoting contraception, but they did not do so in appreciable numbers until the mid-1960s. By that time new contraceptive technology had made mass action programs feasible, first with (IUD) then with oral contraceptive pills at prices permitting general distribution. Subsequently, female sterilization and condom manufactures. Over the last 25 years large scale family planning programs have spread to cover most of the developing world (Ross and Mauldin, 1994).

Japan:

The reasons that Japan's infant mortality rate in 1991 was 4/1000 livebirth, the lowest in the world due to universal access to care.

Most births occur to women aged 25-29 years and 99.7% of births are delivered by qualified professionals (Leppert, 1993).

Malaysia:

Studies have shown that children born before and after short intervals may have great risk of dying in infancy than do others. The data from Malaysian family life survey was analyzed to examine the main behaviors-contraception use and breast feeding on birth interval length. Contraceptive use has a considerably lesser effect on preventing short inter birth intervals than did breast-feeding (Vanzo and Starbird, 1991).

Bangladesh:

Cross-sectional comparison study conducted in two communities in Bangladesh, which differ in type, coverage and quality of maternal, and child health and family planning services. The results show decline overall mortality by 17% among neonates, 9% lower among women living in study area than those living in control area. (Fauveau, et al 1990).

The door to door distribution of information on FP and maternal and child health services every two month visits to couples by field workers has been fundamental in increasing contraceptive prevalence in Bangladesh, which despite poverty has achieved considerable success in FP (Routh, et al 2001).

Africa:

Overview of reproductive health and family planning in sub-Saharan Africa is important, since access to high quality family planning and reproductive health services is a central concern because of more than one factor. First, Sub-Saharan Africa has the highest population growth rates of any region, averaging 3% per year. Second, an estimated 22 million women in the region are not currently using family planning, but want to delay or avoid future pregnancies. Third, 40% of the World's 215,000 annual deaths among women in childbirth occur in the region. Forth, health problems which stem from illegal abortions and increased sexual activity of adolescents. Finally and the

most important, the World's HIV/AIDS pandemic is hitting Africa (Miller, Fisher and Askew, 1998).

In the 1970s, availability of modern contraception was rare in Africa, except for pilot program activities. African policy makers did not experience the population density of Asian context, consequently they provide little support for population control. Family planning, which was controversial in the socioeconomic setting in much of Africa, making leaders to keep away. At the Bucharest World Population Conference in 1974, African leaders support socioeconomic development rather than demographically oriented approach. During the 1980s, African government presented more concern about high population growth rate (Miller, Fisher and Askew, 1998).

In 1984, African leaders approved the Kilimanjaro Program of Action for African population and self-reliant development formulated in Tanzania, which called for the provision of family planning services and there integration into maternal and child health programs (Miller, Fisher and Askew, 1998).

African models choose a health rationales, spacing rather than limiting of births, and the delivering of family planning /reproductive health services within integrated health programs. At the ICPD, the world endorsed integrated reproductive health programs more in line with Ideal African Models. In the 1990s, the majority of women receive family planning methods from governmental sources, rather than from nongovernmental agencies (Miller, Fisher and Askew, 1998).

The child in Sub-Saharan Africa face one in 10 that he or she will not live more than one year, one in 20 that the child's mother will die giving birth and the child can expect to live for 50 which, 25 years less than children in the industrialized countries (Mac Nemara, 1991).

Regional overview:

There are variations in population policy of Arab countries. Some countries such as Egypt, Algeria and Tunisia encourage family planning while others like Iraq, Kuwait, the Arab Gulf countries encourage increased fertility. The services of family planning and reproductive health are inadequate or financially inaccessible in the Arab World (Aghabekian and Khatib, 1998).

The work of nongovernmental organization such as the IPPF, family planning associations, facing difficulties during implementation of family planning programs in Arab countries. There are many barriers for family planning in Arab countries, like scarcity of resources and the priority to expense for health, nutrition, education and other social services. Political instability and war call for more children to cope for the hard situation, there is a culture believe in Arab countries that family planning being an "imperialist plot"; also family planning may be considered as an anti-Islamic act (Hanafi, 1991).

Egypt:

The International Conference on Population and Development-ICPD held in Cairo in 1994 which is the outcome of three years' hard negotiation, and was agreed by all 180 countries, rich and poor, industrialized and developing (UNFPA, 1998). ICPD states: *"Every one has the right to the enjoyment of the highest attainable standard of physical and mental health. States should take all appropriate measures to ensure, on a basis of equality of men and women, universal access to health-care services, including those related to reproductive health care, which includes family planning and sexual health. Reproductive health programs should provide the widest range of services without any form of coercion. All couples and individuals have the right to decide freely and responsibly the number and spacing of their children and to have the information,*

education and measures to do so. The success of family planning education and programs in a variety of settings demonstrates that informed individuals everywhere can and will act responsibly in the light of their own needs and those of their families and communities. The principle of informed free choice is essential to the long-term success of family planning. Any form of coercion has no part to play" (United Nations Population Fund, 1998).

In 38 rural villages in menoufia governorate in Egypt, a study was conducted to test women's response to a community based contraception distribution program.

Controlling the number of living children, among women not using contraception before the program, those with more sons were more likely to use contraception (Gadalla, Mc Curthy and Campbell, 1985).

Yemen:

In Yemen, where population increases by 3.1% a year and maternal mortality of about 1000/100,000 live births annually are exceptionally high (Farah and Ghouayal, 1994). The women in Yemen, on average give birth to over eight children each, many of them marry young. National Population Action Plan gives special attention for safe motherhood to halve maternal mortality by year 2000, by increasing the prevalence of contraceptive use, rise the minimum age of marriage to 18 years, and providing both post and prenatal care (Farah and Ghouayal, 1994). During implementation of the plan, serious problems beset family planning and maternal and childcare, such as shortages of qualified personnel, shortcoming in the supervision and monitoring of service delivery. Also family planning subject has not been integrated into service training nor is it specified in job descriptions of health professionals, inadequacy of financial resources, shortage of drugs, equipment and shortage of motivated medical and paramedical personnel (Farah and Ghouayal, 1994).

National overview about family planning and reproductive health.

Approximately half of Palestinian population society constitutes of women. It is estimated that "37% of Palestinians get married before the 17 years". Haj Yehia and others stated that "30-39% of married Palestinian women conceive prior to 18 years old". Furthermore, 39.4% of refugee women in Gaza give birth before 18 months after the last child was born. MoH established women's department, which offer women health services (Aghabekian and Khatib, 1998).

According to Abdeen and Barghouty (1994): There are 9 Governmental clinics in the Gaza Strip and 28 clinics in the West Bank that offer family planning services. There are 10 nongovernmental clinics offer family planning services in the Gaza Strip and 28 in the West Bank. The majority of services are counseling and health education. The contraceptive method prevalence is 84% for IUD and 9% for pill. (UNRWA conducted KAP study on family planning and maternal health in 1993 on Palestinian refugee women indicated that 67% of future users of contraception wish to use IUD comparing to 12% wished to use pill) (Aghabekian and Khatib, 1998).

Reviewed Palestinian literature on reproductive health and family planning found the following negative factors regarding fertility control in Palestine. Firstly, lack of knowledge for family planning choices and site of service provision. Secondly, financial or psychological barrier for receiving available services. Thirdly, breast feeding not followed effectively.

Lastly, early marriage (Aghabekian and Khatib, 1998).

Bir Zeit Community Health and Palestine coalition for women's health (1995), interviewed 1793 women. The study revealed that: 82% preferred to be cared for by a female doctor, in contrast to 18% for male. And in term of program, priorities perceived by women, the following were indicated pre and postnatal care, family

planning, counseling, mental health, gynecological care, infection and urinary tract infection, maternal and child health care. Younger women called for family planning more than older women (Aghabekian and Khatib, 1998).

Palestinians have special circumstances regarding increased fertility and they consider high fertility as a political weapon. Also a decision of having children is a family rather than individual. The Palestinians consider children as a resource for help rather than a burden, and they believe children a source of strength for family and support for parents in old age (Aghabekian and Khatib, 1998).

The Women Health Center (WHC) in Bureij Refugee camp conducted a family planning survey in collaboration with the government school of nursing in 1996. The study explored that 98% of the interviewees favour family planning and 88% plan to use a contraceptive in the future. However, 52% of the women at risk do not use contraception because of lack of knowledge, fear of side effect or husband's opposition (Donati, Hamam and Medda, 2000).

Palestinian encourage fertility because of national aspiration and needs for perpetuity, since we have not establish our country, so our children are our future and security. The tribal attitude of Palestinian forces families to increase their individuals believing that the strength of the family depend on the number of their persons especially men. At year 2001 the Women Health and Family Planning Program (WHFPP) is supporting 16 family planning clinic in the Gaza Strip. The total number of clients attending family planning clinics in the period between January and March, 2000 are 8933, while the total number in the same period, 2001 are 11405 (WHFPP, 2001).

Health indicators monitoring reproductive health and family planning.

Health indicators summarize data, which have been collected to answer questions relevant to the planning and management of health programs (WHO, 1997).

Most indicators are expressed in terms of numbers, rates, proportions and averages (WHO, 1997). There has been a demand for monitoring goals and targets in reproductive health. WHO's Division of reproductive health organized two interagency meeting on reproductive health indicators. The objectives of this meeting were: to agree on criteria for the identification and selection of indicators, to achieve a consensus on a minimal list of reproductive health indicators for global monitoring, and to define research needs in areas for which indicators have not yet been identified. Health indicators are used for assessing population's health status, and evaluate the impact of the program. Health indicators may focus on first, the occurrence of an event as live birth, maternal death, and/or complication of a pregnancy. Secondly, the prevalence of a characteristic in a person as use of contraceptive method by a woman, low birth weight in a baby. Thirdly, the prevalence of a characteristic in a health facility as provision of antenatal care (UNDP, UNFPA and WHO, 1998).

Reproductive health indicators are used to assess the current reproductive health status in the population, to monitor the implementation of a program and to evaluate impact and effectiveness of a program. Indicators are not diagnostic, they should be regarded as suggestive of problems requiring action (UNDP, UNFPA and WHO, 1998).

Reproductive health/family planning indicators are:

Total fertility rate, contraceptive prevalence (method) rate, maternal mortality ratio and antenatal care coverage. Other indicators are births attended by skilled health personnel, availability of basic essential obstetric care, availability of comprehensive essential obstetric care, perinatal mortality rate and low birth weight prevalence (UNDP, UNFPA and WHO, 1998). Rates of malnutrition are good indicators of overall child health. Malnutrition is defined as below 70% body weight for age. Malnutrition in infants and children commonly consist of protein-energy malnutrition (Wallace, 1990).

Socio-cultural factors and family planning.

In rural areas of Arab societies such as, Egyptian couples reported strong preference for having sons. Parents like to have both a son and a daughter. If they have two daughters in row, they hope the next baby, if they decide to have another, will be a boy. If they already have a son, they hope to have a daughter. At one point and in some rural areas still, parents would continue trying to have a son even after six or seven girls. With family planning fast becoming the norm among educated, families to have two or three children whether boys or girls, is the general pattern (Samaan, 1993). Social factors play an important role in increasing fertility, such as, some people like to have large families (azwa), deep-rooted tradition of son preferences for boys, pressure from mother and mother in law, religious factors and false understanding about family planning. The level of education achieved by a woman is also strongly associated with both lower infant mortality and lower fertility. High level of education and access to family planning services lead into both lower infant mortality and lower fertility (UNFPA, 1997).

Education has a major influence on women's access to information and on her capacity to identify and seize opportunities to improve her life and the lives of their children. Female education affects women's health and economic status. An educated mother is likely to provide her children with nutritious foods and to seek health care for the children and herself (Save the children, 2000). Women increased level of income, labor force participation, and occupational status lead to decrease in fertility.

Moslem rule had a great impact on life in general and on women in particular. Islam aimed at developing laws and traditions to free humanity and establish justice for all human beings. It preached equality of both sexes regarding rights and duties, education, work, religion, and government. Islam considers the family is the basic unit for the

Islamic society. Moslems have different interpretations about Islamic opinion for family planning, one group is opponents and the other is a proponent.

Opponents justify their opinion from Holy Quran:

"31" Kill not your children for fear of want: We shall provide sustenance for them as well as for you. Verily the killing of them is a great sin (Al-Israa).

"12" that they will not kill their children, (Al-Mumtahana).

"86" but remember how ye were very little, and He gave you increase (Al-A'raf).

"72" And Allah has made for you mates (and companions) of your own nature, and made for you, out of them, sons and daughters and grandchildren. And provided for you sustenance of the best: will they then believe in vain things, and be ungrateful for Allah's favours? (An-Nahl).

"61" It is He Who hath produced you from the earth and settled you therein: (Hud).

"74" And those who pray, "Our Lord grant unto us wives and offspring who will be the comfort of our eyes, and give us (the grace) to lead the righteous." (Al-Furqan).

"223" your wives are as a tilth unto you: so approach your tilth when or how you will; (Al-Baqarah).

Proponents also justify their opinion from Holy Quran and Hadith:

"14" And We have enjoined on man (to be good) to his parents: in travail upon travail did his mother bear him, and in years twain was his weaning: (hear the command),

"Show gratitude to Me and to thy parents: to Me is (thy final) goal (Luqman). So, Islam emphasizes two years of breast-feeding if the mother would like to complete the duration of breast-feeding.

"233" the mothers shall give such to their offspring for two whole years, if the father desires to complete the term. But he shall bear the cost (Al-Baqarah).

"3" then only one, or (a captive) that your right hands possess. That will be more suitable, to prevent you from doing injustice (An-Nisaa).

"100' Say: "Not equal are things that are bad and things that are good, even though the abundance of the bad may dazzle thee; so fear Allah, O ye that understand; that (so) ye may prosper." (Al-Maidah).

In the Hadith there is approval of the Azl (withdrawal) method and that was the only family planning method known in those days. Male withdrawal method was used in Moslem society at the times of Prophet Mohammed. A companion of the Prophet related the following: *"We used to practice coitus interruptus during the time of Prophet. The Prophet came to know about it but didn't forbid us. The Prophet, however, insisted that the wife should give her consent to the practice"* (Evans and Huezo, 1997).

Family planning service:

- **Family planning counseling:**

Family planning counseling is an important safeguard in helping the clients to be informed and voluntary choice the suitable contraceptive method. The goal of counseling is to provide opportunities for people to discuss their circumstances, needs, and options to help them make informed decisions about contraception, fertility and sexual health. There are four basic elements of family planning counseling:

Firstly, it involves two way communications, with both the counselor and the client spending time listening and talking. The counselor should be objective, showing no bias for or against any contraceptive method. Secondly, empowers clients to make voluntary informed and decisions about fertility, sexual health and contraception. Thirdly, help clients to use contraceptive method correctly.

Fourthly and the last, counseling is respectful of each client's individual needs and value (Evans and Huezo, 1997).

Contraception choices:

The people make different contraceptive choices, as their circumstances change, couples if they like to choice contraceptive method, they begin by using temporary methods, such as the pill or condom to space pregnancies. After years pass, they may change from one method to another. They stop using contraception when they decide to have a child. They start to use long lasting temporary method (IUD, injectable, implantables) or permanent methods (tubal ligation, vasectomy), when they have had all children they want (Diczfaluzy, et al 1994).

Contraceptive methods

Oral contraception: There are two types:

Combined oral contraceptive (COCs) which was first marketed at 1959 and in the late 1960s progestagen only contraceptive where introduced. COCs are the most widely used form of hormonal contraception, with 70 million users worldwide. In the developed countries usage rates vary from 2.5% in Japan to 40% in Netherlands. In developing countries usage tends to be lower than in developed countries and is more common among parous women. Failure rates range from 0.1% to 8.0%. Factors affecting the usage are biological as age, family size, by cultural and political consideration and by effect of surrounding media (Evans and Huezo, 1997).

Reduction in a risk of acute pelvic inflammatory disease in COCs users when compared with other methods users (Evans and Huenzo, 1997). Epidemiological studies have suggested that the risk of acute pelvic inflammatory disease is significantly higher in women who use contraceptive methods than non-users (Sharief, 1998). An increased risk of fetal abnormalities had not been proven when women have taken COCs while

pregnant or pregnancy occurred during COCs use (Evans and Huenzo, 1997). One of the non-contraceptive benefits of COCs is reduction of menstrual blood loss, decreasing the risk of maternal anemia (Evans and Huenzo, 1997).

Long acting hormonal contraception:

Injectable hormones. As Progestagen only injectables, depot medroxyprogesterone acetate (DMPA), given every 3 months.

Combined injectables, cycloferm/cyclprovera contains medroxyprogesterone acetate and oestradiol cypionate, given monthly.

Subdermal Norplant's, Norplant contains levonorgestrel, provides protection for 5 years (Evans and Huezo, 1997).

There are no known teratogenic effects due to the inadvertent fetal exposure to DMPA, but limited data showed increased risk of premature delivery, low birth weight and neonatal mortality. Follow up of children who have been exposed to DMPA in utero shows that no social, psychological and physical development abnormality (Evans and Huenzo, 1997).

Intrauterine devices; (IUDs)

Since the early 1960s IUDs have undergone many improvements. They are effective and safe method, about 100 million women used it worldwide. The failure rates of copper IUDs range from 0.4 to 2.5% during the first year of use (Evans and Huezo, 1997). In case of failure of IUDs and the client becomes pregnant, there is a higher risk of spontaneous abortion and premature delivery but the IUD will not increase the risk of fetal abnormality (Evans and Huenzo, 1997).

A survey of women with abnormal vaginal discharge was conducted among patients attending gynecological clinics in Iraq in 1995. The survey showed that women infected with candida albicans was significantly higher among women using oral

contraceptive pills meanwhile, women infected with *Gardnerella* sp. was significantly higher among women using an IUD (Sharief, 1998).

The prevalence of genital infections can lead to considerable mortality and morbidity among neonates and their mothers (Sharief, 1998).

Barrier methods of contraception:

Barriers are designed to prevent passage of sperm into the uterus during sexual intercourse. There are almost no contraindications to its use and they provide considerable protection from sexually transmitted diseases. Male barrier methods, condoms are readily available worldwide which has failure rate 2-12%. The female methods are diaphragm, female condoms, and cervical cap (Evans and Huezo, 1997). Condom is effective mechanical barrier to various microorganisms including sexually transmitted diseases, which protect the mothers and consequently her baby if she likes to get pregnancy latter on.

Surgical contraception.

Male and female sterilization is often the best contraceptive choice for limiters, who having achieved desired family size want no more children. Sterilization is the most effective and most widely used contraceptive method worldwide, more than 170 million couples in at least 100 developed and developing countries have opted for sterilization. The procedures are vasectomy for males and tubal ligation for females. Because surgical contraception intended to end fertility permanently, its best to counsel both the client and the partner as a couple and individually to reduce the likelihood of future regret (Evans and Huezo, 1997).

Periodic abstinence (safe period):

Based on scientific criteria began in 1929, when ovulation occurring about 14 days before onset of menstruation. About 10-15 million couples throughout the world are

thought to practice some form of periodic abstinence. The techniques of periodic abstinence include calendar/rhythm, basal body temperature, cervical mucous and sympto-thermal. The failure rates of periodic abstinence range from less than 2% to 30% during the first year of use (Evans and Huezo, 1997).

Coitus interruptus: (Male withdrawal method)

Coitus interruptus or male withdrawal is the oldest method of reversible contraception. Many couple uses this method and many births are averted, yet it has been very little studied. No doubt there are better methods of contraception, but for many people it represents a practical solution to an every day problem (Oodit, 1996). The failure rate shows wide variation, ranging from 70% to 37% (Evan and Huezo, 1997).

Lactational Amenorrhea Method (LAM):

A woman not using LAM if the baby gets substantial food other than breast milk or the mothers' menstrual periods return or the baby reaches 6 month of age. (WHO, 1997).

Breast-feeding is essential for baby's health and his mother and it's better for the women not to get pregnant that may cut off breast-feeding. Amenorrhea breast-feeding itself decreases the chance of women to get pregnant especially in the first 6 month.

A study was conducted to test the result of a 12-month implementation of LAM through integrating the LAM into multiple method family planning service delivery organized in Ecuador. LAM was accepted by 133 breast-feeding women during the program's first five months, 73% of LAM acceptor were new to any family planning method. Follow up interviews with a systematic sample of 67 LAM users show correct use of method.

Three pregnancies had occurred, none by women were following LAM as recommended (Wade, Sevilla and Labbok, 1994).

In 1988 an International group of scientists in Bellagio, Italy reviewed the scientific evidence related to the effect of breast feeding on fertility. They concluded that women

who are not using family planning methods, but are fully or nearly fully breast feeding and amenorrheic, are likely to experience a risk of pregnancy of less than 2% in the first six months after delivery. LAM is an effective and reliable method of birth control, but the mother is advised to use a complementary FP method if after more than 8 weeks postpartum menstruation has return or the baby is more than 6 months (WHO, 1998).

Chapter III

Methodology

Research design:

A case control study has been conducted to determine the impact of family planning programs on child health. Two groups are subjected for comparing the health indices of children born for a group of women who practice family planning and other group who do not practice family planning. The group of women, who practice family planning (the users) were selected firstly, then controls were chosen (non-users). A case control study is selected because it is relatively easy to conduct, less effort, less time consuming, and of medium cost (Benglehole, Bonita and Kjellstrom, 1993).

Target population:

Children aged 2- 3 years for mothers of reproductive age (15-49) were the subjects of the study.

Period of the study:

The researcher started on July/1/2001. Pilot study on Aug./1/2001. Actual data collection started on Aug./12/2001 to Oct./15/2001. Data entry and analysis on Nov/10/2001, writing the results and discussion on Dec/5/2001 and writing the conclusion and recommendation on Jan/2/2002. Writing the final report on Feb/1/2002.

Setting:

The study was conducted on four different localities in the Gaza Strip.

The first locality was Rimal district of Gaza city with population of 60,000. It is the most civilized part of the Gaza strip (Abed, et al 1997).

The second was Jaballia village, which is situated 3 kilometers to the north of Gaza city, the 24,000 population are almost economically dependent on agriculture. This village is

mainly served by a MoH clinic, which provides curative and preventive care (Abed, et al 1997).

The third was Dir-albalah Refugees' camp which lies along side of Mediterranean Sea to the west of Dir-albalah city. It has the most population density of Dir-albalah, which is about 15,970 people living at 0.2 sq. kilometer. About 1587 people was living in Dir-albalah in 1931 (Ebed and Al-Dirawy, 1999). UNRWA provides the health services.

The forth was Bureij Refugees' camp which, was established in the 1949 after the first Arab/Israeli war. It has 27,000 people living in 0.5 Sq. Kilometer. Living conditions are unhygienic with inadequate sewage disposal and inadequate water supply. It is overcrowded with the highest population density. The camp is served by MoH through primary health care centers, UNRWA health centers and NGO's, especially Women Health Center (WHC) which, provide clinical out-patient services, health worker training, legal and psychological counseling, community education and outreach programs. Women attend the outpatient clinic for antenatal and postnatal care, detection and treatment of gynecological problems, ultrasound examination and family planning services (Women Health Center, 1999).

Sample technique:

Convenient sample was chosen and it is useful in this research situation. The researcher tried to select probability sample but it was very hard or impossible in this situation because of many causes. Firstly, unavailable and incomplete family planning records. Secondly, Family planning records lack of accurate addresses, Identity card numbers and other important point as the birth date of last baby, which is essential to know if the mother has a baby, aged 2-3 years. Thirdly, women practicing family planning by using IUD rarely come to check up the method and they may default for a long time.

Consequently, it is hard to know if they continue to practice the method, stop or become

pregnant. So, randomization according to file number is not practical at this situation. Lastly, the clients may have family planning records but she stop practicing family planning and it is very hard to contact with her "inaccurate address or telephone numbers'.

The sample covered the three different localities in the Gaza strip. Gaza city could represent the urban area, Jabalia village for the rural area and Dir El- balah with Bureij for the camp.

The first group (cases) was selected from the clients who visit the family planning center who fulfilled the selection criteria after obtaining the consent. The second group (control group) was selected from the other side of primary health center who fulfill the selection criteria and not practicing the family planning.

Sample size:

A total of 300 women who had children aged 2-3 years were included in the study. One hundred fifty cases whose mothers practice family planning (users), and one hundred fifty as controls (non-users). The users' children (cases) were selected from the different settings as follows, 50 children from Rimal area of Gaza city, 50 from Jaballia village, 25 from Dir-alballah camp and 25 from Al-Bureij camp. The non-users' children (controls) were selected as the same pattern for cases. The response rate was 92.3% and another subjects replaced non-respondents.

Selection criteria:

Participants in the study will fulfil the following criteria:

Cases (users):

- 1- Couples should practice family planning at least for two years.
- 2- Women at reproductive age group (15-49).
- 3-Couples are living together (the husband not abroad or in jail).

3-Couples are living together (the husband not abroad or in jail).

4-Age of children between 2-3 years.

Controls (non-users):

The same above criteria except the couples doesn't practice family planning. The age of mothers included in this group has been matched with those of cases ± 5 , because the age variable affects child health.

Ethical consideration and procedures:

- 1- Approval letter from Helsinki Committee in the Gaza Strip (Annex, 6).
- 2- Approval letter from director general of primary health care to conduct study in the primary health centers of MoH (Annex, 7).
- 3- Approval letter from Chief Field Health Program of UNRWA (Annex, 8).
- 4- Approval letter from director general of Culture and Free Thought Association (Annex, 9).
- 5- Informed consent to be applied for the mothers for their agreement to participate.

Confidentiality and privacy: Information obtained from clients was kept confidential.

Identifying subjects with a code number rather than name protected the identity of study subjects. The right of the clients to hear about the nature of the study, clients informed that they could receive all the services of health facility whether or not they participate in the study. The consent form presented to the subject whom freely agreed to her inclusion in the study.

Data collection:

The data was collected by:

Direct method: observation of somatic character of children and measuring of weight and height. The variables that were collected by this method were weight, height, and general examination.

Indirect method: structured interview questionnaire.

Interviewing clients in the primary health center after taking consent of the clients. The questionnaires were organized, arranged and serial numbers were provided. Three interviewers were subjected for training to fill the questionnaire.

The variables were collected by interviewing the mothers such as data about personnel characteristics, obstetric variables, socioeconomic variables and variables about mother and child health.

Variables documented in the child health record like birthday, birth weight, age of sitting and walking and information about diseases and treatment that the child had been received.

Questionnaire design.

Questionnaire design is based on utility, to facilitate the work of interviewer and data processor. The questionnaire of closed end type and all cases and controls were interviewed (Annex, 10). However, the questionnaire included information on five main areas as follows:

Personal information: as address and age.

Socioeconomic information: as employment status, years of education, consanguinity and income.

Obstetric history: as age of marriage and first delivery, age of youngest and oldest child, parity and number of pregnancies, place of delivery and history of stillbirth, abortion and child-miss.

Mother health status during pregnancy of concerned child: as diabetes mellitus, hypertension, anemia, heart disease and history of infectious diseases like toxoplasmosis and rubella. History of drug use, exposure to x-ray and/or smoking or exposure to passive smoking.

Child health information: as history of birth trauma, cyanosis or jaundice at birth.

Birth date, birth weight and sex of the child. Breast-feeding, vaccination status and age of developmental milestones (walking and sitting). Seeking medical advice and history of hospitalization. Also, the children were subjected to physical examination.

Standardization of measuring techniques:

Height measurement: Measuring techniques eliminating positional errors are readily practiced and learned to the interviewer. The child's head was positioned with the external auditory meatus and outer canthus of the eye in the same horizontal plane. Gentle upward pressure is applied under the mastoids and the child is asked to breathe in and then out and relax the shoulders. Care must be taken to ensure that the child is barefooted and doesn't lift his heels from ground (Kelnar, 1989). Accuracy of height measured up to one cm. is considered.

Weight measurement: The child's weight is measured by balance scale, which checked at zero level before measuring procedures. The child wore light cloths and accuracy of body weight up to 0.1kg. Measurement of height and weight take place at end of examination.

Physical examination:

The researcher performed physical examination of the concerned children. The researcher used a stethoscope, thermometer, tongue depressors and his clinical sense. Examination involved history taking, inspection, palpation, percussion and auscultation.

Pilot study:

Pilot study was conducted on 2 cases and 2 controls from each study area to test the response size of effect and provide evidence about health personnel working in the study areas. Pilot also clarifies areas of ambiguity and the suitability of the questionnaire. These study subjects were excluded from the sample of study.

Postpiloting, the questions had been underwent reframing and remodeling to be clearer and easier to understood.

Data analysis:

The statistical package for social science (SPSS) program and Epi-info 6 were used.

- *Data entry: Defining and coding of variables.

- *Data cleaning.

- *Frequency tables of all variables.

- *Cross tabulation

Chi-square test was the statistical tool used to test the differences between users and non-users variables. t test for differences between means is also conducted and Odd's ratio with confidence interval was also used.

Limitation of the study:

- 1- Limited resources.

- 2- The addresses are incomplete.

- 3-Incomplete family planning records, where some important data are not registered like the date of delivery of last baby and the Identity number which, more detected in the files of MoH service provider.

- 4-The study was convenient and non-randomized therefore, generalization should be cautiously considered.

Chapter IV

Results

This chapter presents the results of analysis of the study variables for 300 participants (150 users and 150 non-users) distributed in the three localities which, provided information and clarified certain points on child health. The results show whether practicing family planning does influence the child health or not. Firstly, the researcher describes the study population characteristics and maternal variables, and compares the relationships between the two research groups. Secondly, the child health variables are presented in a comparative way between users and non-users of family planning.

Study population characteristics:

A total of 300 mothers with a mean age of 28.94 years, SD= 6.21 years (minimum=19; maximum=46) were included in the study. The average age of users was 30.2 years, SD= 6.06 which was higher than the average age of non-users (27.68, SD=6.12). It is worthy remembering that in this study age was matched between users and non-users -/+5 years as mentioned earlier in chapter 3.

The frequencies of data showed that 41.7% of couples of study population were of first degree cousins.

More than half of participants (52%) had no chance to complete their secondary school education, 36% of them had got secondary school and only 12% were university graduated. Of users 55.3% are less than 10 years educated, but 48.7% of non-users are less than 10 years educated but, it was statistically not significant (P-value=0.49).

Moreover, a quarter of husbands were University graduates, 27.7% of them finished secondary schools and slightly less than half of fathers are unfortunate because they did not attend secondary schools. However no statistically significant differences between

husband's educational level of user subjects and those for non-user were observed (P-value 0.651).

Regarding occupational status, the great majority (96.3%) of the study population were housewives and only 3.7% were employed or students. In contrast 40% of their husbands were employed and 60% of them were labors, most of them (38%) were unskilled labors with occasional work chances.

The study revealed that the mean monthly income was 888 NIS, (minimum=0, maximum=5000), SD=995.48, median=800). The data was collected while most of labors were without work since nearly one year (because of Al-Aqsa Intifada). There were no significant differences between users and non-users regarding monthly income. On the other hand, 49% of study population had monthly income of less than 700 NIS, 34% had income between 700- 1500 NIS and only 17% had income more than 1500 NIS.

Examining the data shows that 42.7% of women used (IUD) as a contraceptive, 26.7% of women used pills and 18.7% of husbands used condoms, while 12% used other methods. Most of women who practice contraception in the village and camp prefer IUD, while in the city they prefer pills.

Half of women of the study population had delivered their babies at the Government hospital, the other half had delivered at private clinics, UNRWA clinics and private hospitals. The research showed that 88% of children of the study population was born normally (vaginally) and only 12% by caesarian section. Users delivered their babies by caesarian section at 14% and non-users at 10%, but the difference between users and non-users did not reach statistical significance (P- value 0.286). The study indicated that 94% of deliveries were at term, 2.3% preterm and 3.7% postmature. The study also revealed that 4.7% of mothers gave history for twins' delivery. Only five children out of

300 were exposed to birth trauma during delivery and about 5.7 percent of study children were cyanotic at birth.

Examination of children clinically revealed no stigmata of endocrine abnormalities and only one child who was subjected for surgery to repair a congenital heart disease. Also no abnormalities were detected by neurological examination apart from one child aged 3 years and he was unable to walk and no congenital malformation or autosomal malformation was observed.

Table 1- Characteristics of users and non-users

Characteristics	Users		Non-users		Total	
	No.	%	No.	%	No.	%
Age (years)						
<25	35	23.3	65	43.3	100	33.3
25-34	86	57.3	65	43.3	151	50.3
35 & more	29	19.3	20	13.3	49	16.3
Education (years)						
<10	83	55.3	73	48.7	156	52
10-12	51	34	57	38	108	36
>12	16	10.7	20	13.3	36	12
Monthly income (NIS)						
<700	67	44.7	80	53.3	147	49
700-1500	58	38.7	44	29.3	102	34
>1500	25	16.7	26	17.3	51	17

The characteristics between users and non-users from the different demographic areas were compared in the table (1) above, which shows that the users and non-users were nearly similar in years of education and monthly income but there were younger subjects among non-users and more users were in the age group between 25-34 year.

Regarding history of chronic diseases during pregnancy of the concerned child, the research showed 92% of mothers are free of chronic diseases, as they said. The others reported having hypertension in 4.7% and 1% suffering diabetes mellitus. Most of the

interviewed mothers (98%) were free from communicable diseases as they said. Only 1.7% had toxoplasmosis and 0.3% suffered from hepatitis B virus.

Maternal variables:

Marital age:

The study revealed that 63% of subjects get married before 18 years old. Whilst, the mean age of marriage for study population was 18.19 years (minimum=13, maximum=38, SD=3.45), the mean age for users was 17.65 years and for non-users it was 18.74 years. Early marriage is more apparent among users (67.3% married before 18 years old) compared to 60.7% for non-users (P-value 0.256). And 46.3% of subjects also get married before 17 years old

Age at first delivery:

The mean age of mothers at first delivery was 19.55 years (minimum=14, maximum=38). Of subjects 41% gave history that they had delivered their first baby before they reach their 19 birthday, 42%, 40% for users and non-users respectively (P-value 0.725).

Family size and the practice of family planning:

The average number of children (fertility rate) of the study population was 4.51, (minimum=1; maximum=15, SD=2.51). The mean number of children among users was 5.07, SD= 2.51 but for non-users, the mean was 3.95 and SD=2.38. This indicated that mothers tend to practice family planning after they had many children.

Table (2) shows that users have in general more children than non-users. For instance, users participants who have less than 4 children constituted 44% meanwhile, non-users who have less than 4 children constituted 66%. Mothers having more than 6 children constituted 23.3% of the participants, distributed as 28.7% for users, which are higher

than for non-users (18%). The differences were statistically significant at (P-value 0.001).

Table 2-Total number of children among users and non-users

Variable	Users		Non-users		Total		P-value
	No.	%	No.	%	No.	%	
Less than 4	66	44	99	66	165	55	0.001*
4-6	41	27.3	24	16	65	21.7	
more than 6	43	28.7	27	18	70	23.3	
Total	150	100	150	100	300	100	

**Statistically significant*

Table (3) reveals that total number of children mothers had inversely proportional with the educational level of mothers. Of 8.3% of mothers who were university educated had more than 6 children compared with 31.4% who had more than 6 children are of low educational level, less than10 years. Also, 75% of those university graduated have less than 4 children compared only to 48.1% of those undergraduates, the differences are statistically significant (P-value 0.004).

Table 3- Mother education (years) and total number of children the women have

Education (years)	< 4 children		4-6 child		6 &more		Total		P- value
	No.	%	No.	%	No.	%	No.	%	
<10 years	75	48.1	32	20.5	49	31.4	156	100	0.004*
10-12 years	63	58.3	27	25	18	16.7	108	100	
>12 years	27	75	6	16.7	3	8.3	36	100	

**Statistically significant*

Number of deliveries (parity) among users and non-users:

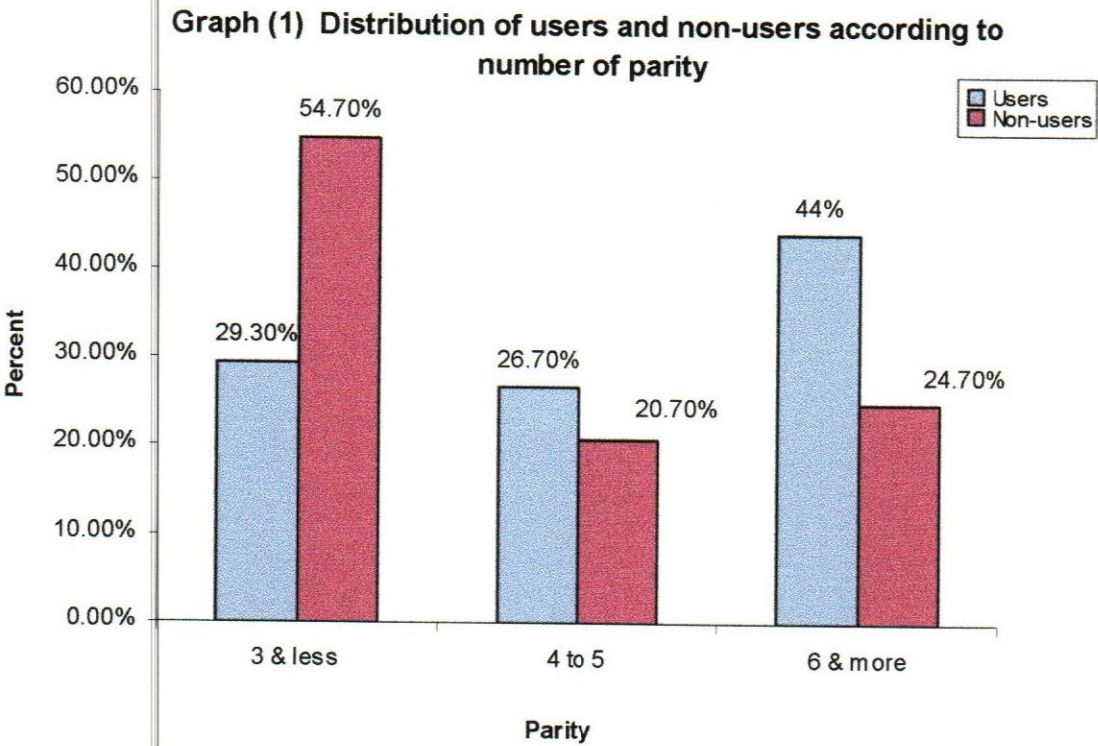
Table (4) shows that the output of cross tabulation between users, non-users and number of deliveries revealed a significant differences among subjects in which, 44% of users

have 6 and more deliveries comparing with only 24.7% for those who do not practice family planning. Meaning that the number of parities is measuring family planning users. However, the differences between the two groups were statistically significant (P-value 0.001). It is also clarified in graph (1) below.

Table 4- Parity among users and non-users:

Variable (parity)	Users		Non-users		Total		P-value
	No.	%	No.	%	No.	%	
3 & less	44	29.3	82	54.7	126	42	0.001*
4-5	40	26.7	31	20.7	71	23.7	
6 & more	66	44	37	24.7	103	34.3	
Total	150	100	150	100	300	100	

*Statistically significant.



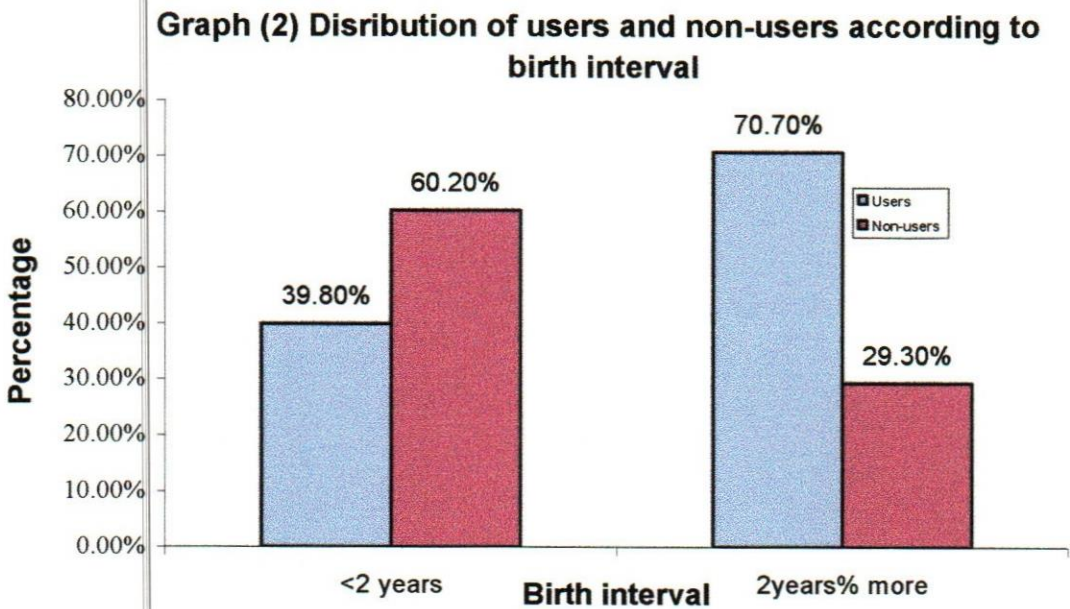
Birth interval:

Looking at table (5) will discover that birth interval (spacing) of two years and more constituted 70.7% among users which, is higher than spacing among non-users (29.3%) and this difference is statistically significant (P-value 0.001). Also graph (2) clarifies these differences.

Table 5- Birth interval among users and nonusers:

Birth interval	Users		Non-users		Total		P-value
	No	%	No	%	No	%	
< 2 years	80	39.8	121	60.2	201	100	0.001*
2 years & more	70	70.7	29	29.3	99	100	

**Statistically significant*



Child sex and family planning practice:

The children had subjected to study consist of 53% males and 47% females. Of them 28.3% and 24.7% distributed between users and non-users for the boys respectively but this difference did not reach a statistical significance (P-value 0.20).

History of abortion, stillbirth and child missing:

Abortion seems to affect the practice of family planning, 41.7% of women subjected to study gave history of abortion. Table (6) below clarifies that 38.7% of users gave history of abortion which were less than non-users (44.7%) but the difference did not reach statistical significance (P- value 0.292). Also the study did not show significant differences between users and non-users regarding stillbirth, were 5% of study population suffered stillbirth, from them 4.7% users and 5.3% non-users (P-value 0.791). Also, the study explored that 13.7% of study population missed at least one child, from them 14.7% non-users and 12.7% users. Also, the difference was not statistically significant (P-value 0.614).

Table 6: History of abortion, stillbirth and child missing among users and non-users.

Variable	Users		Non-users		P- value
	No.	%	No.	%	
History of abortion:					
Yes	58	38.7	67	44.7	0.292
No	92	61.3	83	55.3	
Delivery of stillbirth:					
Yes	7	4.7	8	5.3	0.791
No	143	95.3	142	94.7	
Child missing:					
Yes	19	12.7	22	14.7	0.614
No	131	87.3	128	85.3	

reference to smoking, the study showed 5.7% of low birth weight children of smoking fathers compared with 3.5% for those non-smokers but the difference did not reach a statistical significance (P-value 0.373). The study also revealed a relationship between anemia of pregnancy and low birth weight baby, 71.4% of LBW children's mothers are anemic and 28.6% of LBW children' mothers are non-anemic. But this relation did not statistically significant (P-value 0.688).

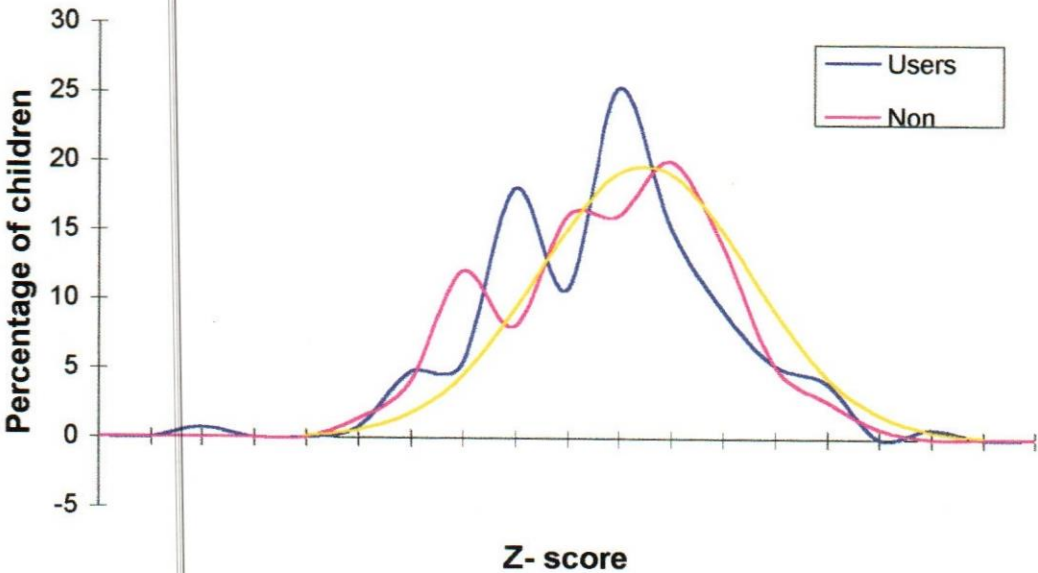
Growth and development:

***Weight/age:**

Table (8) shows that the percentage of under weight of children for users 6.7% which was less than that of non-users 13.3% and the contrary is true where, over weight children of users constituted 13.3% compared to only 6.7% for non-users. The differences reached to a statistical significant level (P- value 0.03).

Graph (3) represents the distribution of the study population compared to the National Center of Health Statistic (reference data).

Graph 3: Distribution of Weight /Age of children for users and non users compared to NCHS reference data

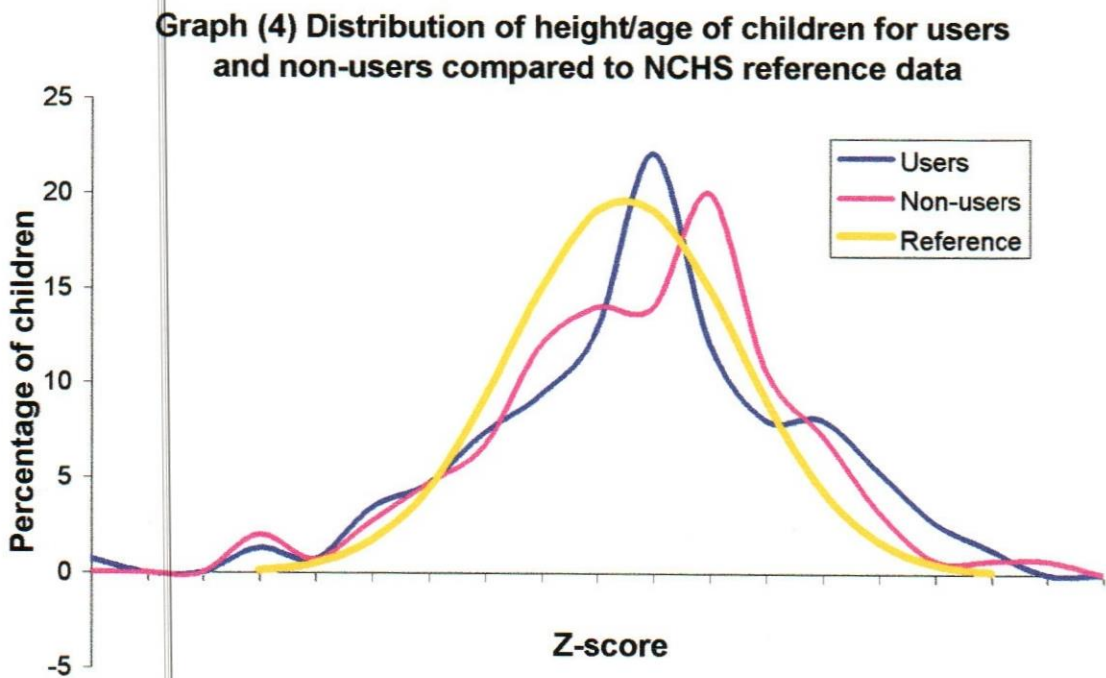


Users curve shows shift to left and more central tendency than non-users curve and the latter also shifted to left more than reference curve. This means that users' children are lighter than non-users' children and the latter are more lighter weight than reference.

***Height/age:**

Table (8) shows that children of non-users are shorter than children of users 12% & 8% respectively but this small difference did not reach a statistical significance. Also, children of users are taller than children of non-users 10% & 7.3% respectively.

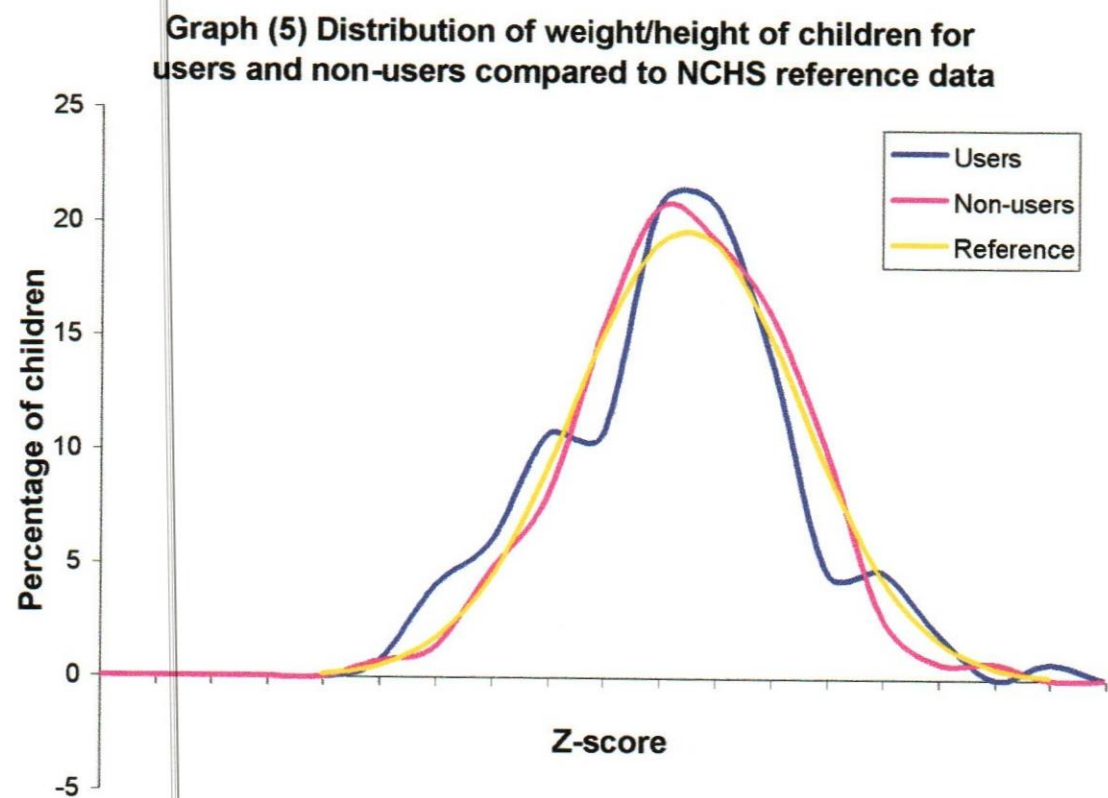
Graph 4 represents the distribution of study population in comparison to the National



Center of Health Statistic reference data. The users curve shows shift to right than the non-users curve which indicates that users' children are taller than non-users' children but both study population curves are shifted to right in relation to reference curve indicating that study population are taller than reference.

***Weight /height:**

Table (8) shows that children of under weight in relation to height are more for users than non-users, 12.2% and 8.7% respectively. Graph 5 represents the distribution of study population in relation to National Center of Health Statistic.



No apparent differences between children of users and non-users in weight/height, both groups approximate the normal distribution curve of reference as stated by National Center of health Statistic.

Table 8: Relationship between children of users and non-users for weight/age, height/age and weight/height

Variable	Users		Non-users		P-value
	No.	%	No.	%	
Weight/age:					
Under 10 th percentile (under weight)	10	6.7	20	13.3	0.03*
Between 10 th & 90 th percentile	120	80	120	80	
More than 90 th percentile (over weight)	20	13.3	10	6.7	
Height/age:					
Under 10 th percentile (short stature)	12	8	18	12	0.40
Between 10 th & 90 th percentile	123	82	121	80.7	
More than 90 th percentile	15	10	11	7.3	
Weight/height:					
Under 10 th percentile	18	12.2	13	8.7	0.49
Between 10 th percentile to 90 th percentile	118	79.7	121	80.7	
More than 90 th percentile	12	8.1	16	10.7	

**Statistically significant*

***Age at sitting:** The mean age of sitting for children of study population is 6.28 months (minimum=4, maximum=16), SD=1.44. Cross-tabulation demonstrates 67.1% of users' children have sit before 7 months of age while, 71.3% of non-users children have sit before 7 months. Meaning that children of non-users had sit before those of users' children but the difference did not reach a statistically significance level (P- value 0.42) as shown below at table (9).

***Age at walking:** Table (9) shows that the mean age of walking for children is 12.58 months (minimum=8, maximum=24). Testing the difference between users and non-users regarding age of walking, the study shows 56%, 58.7% for children of users and

non-users respectively. Meaning that children of users walked after those of non-users but the difference was not of statistical importance (P- value 0.62).

Breast-feeding status:

It is already known that breast-feeding is essential for physical and emotional development of the child. Table (9) shows that the 95.3% of participants breast-fed their children, 96.7% and 94% for users and non-users respectively, but it was not of statistical significance (P- value 0.42). The mean duration of breast-feeding is 15.73 months (minimum=1, maximum=36 months), SD=6.67. When testing the difference between users and non-users regarding duration of breast-feeding for more than 12 months, 71% for the former and 63% for the latter, but it did not reach a statistical significance (P- value 0.19). About 70.3% of mothers breast-fed their infants exclusively for the first 4 months.

Table 9: Child health status (well-being) indicators:

Variable	Users		Non-users		P- value
	No.	%	No.	%	
*Birth weight:					
<2.5 kg.	7	4.7	7	4.7	1.000
2.5 kg. & more	143	95.3	143	95.3	
*Age of sitting:					
Before 7 month	100	67.1	107	71.3	0.429
7 months & after	49	32.9	43	28.7	
*Age of walking:					
At one year & less	84	56	88	58.7	0.641
After one year	66	44	62	41.3	
*Breast-feeding status:					
Yes	145	96.7	141	94	0.274
No	5	3.3	9	6	
*Duration of breast-feeding:					
One year & less	42	29	51	36.2	0.193
More than one year	103	71	90	63	

Selected child morbidity indicators:

Anemia:

Anemia among users and non-users:

This was interpreted previously at page 62 and table (7).

Anemia among children of users and non-users:

The study revealed that the mean hemoglobin level (documented in the child file) was 10. 697 gm/dl. (Minimum=8, maximum=13.6) and SD=1.038, 68% of children were anemic. From them 73.6% of users' children are anemic compared for 62% of non-users' children but the difference did not reach a statistical significance (P-value 0.208). Looking at table (10) below shows t test for child hemoglobin of users and non-users. The mean of child hemoglobin of users was slightly lower than that for non-users but did not reach to a statistical significance.

Table 10: t test comparing the means of child hemoglobin level (gm/dl) among users and non-users.

Variable	Subject	Number	Mean	SD	t	Sign
Child Hemoglobin	Users	53	10.66	1.08	-.330	0.742*
	Non-users	50	10.73	0.99	-.331	

**Statistically not significant*

Relationship between child hemoglobin and mother hemoglobin:

As shown in table (11) below that 76.1% of anemic children was observed, their mothers were anemic also, whilst 23.9% of anemic children, their mothers were non-anemic. In contrast, 54.8% of non-anemic children, their mothers were anemic, whilst 45.2% of non-anemic children, their mothers were non-anemic. Odds ratio was 2.6 with 95% CI (1.06-6.47), which means a positive association between anemic children and anemic mothers.

Table 11: relationship between child hemoglobin and mother hemoglobin

<u>MOTHER</u>	<u>CHILD</u>					
	Anemic		Non-anemic		Total	
	No.	%	No.	%	No.	%
Anemic	51	76.1	17	54.8	68	69.4
Non-anemic	16	23.9	14	45.2	30	30.6
Total	67	100	31	100	98	100

Jaundice at birth:

The study showed that 11% of children suffered jaundice at birth, from them 11.3% of users' children were jaundiced at birth while 10.7% of non-user' children were jaundiced. The difference between users and non-users did not reach a statistical significance (P-value 0.854).

Child health-care at last year:

The interviewer asked the mothers if their children had received health-care by a health professional last year, the majority of them 97.7% replied yes. Children had received more than 7 times health-care constituted 22.2%. From them 23.3% for users' children and 21.1% for non-users' children. But the difference was not statistically significant (P- value 0.740).

Child hospitalization:

The results of research study implied that a quarter of children had been admitted to hospital at least once, 28% of users' children and 22.7% of non-users' children. The difference did not reach a statistical significance (P- value 0.288).

Physical examination of the child:

***Respiratory diseases:**

Clinical examination of pulmonary system revealed 79.75% of children free of respiratory diseases at time of examination. Cross-tabulation between research category in this area revealed 17.3% of non-users' children suffer URTI compared with only 8% for users' children but for wheezy chest, the 2 research groups are approximately close together (Table, 12). The differences between the 2 groups reached a statistical significance (P- value 0.05).

***Alimentary tract disorders:**

At time of examination only 5% of study population have suffered gastrointestinal diseases, but looking through child health files discovered most of them had given certain medicines for gastroenteritis and/ or parasitic infestation. Non-users' children have GIT diseases slightly higher than of users' children, 5.3% for the former and 4.7% for the latter (Table, 12), but the difference was not statistically significant (P- value 0.791).

***Skin diseases:**

Dermatological examination revealed that 92% of studied children were free of skin diseases. Those had skin disease formed 6% of users' children compared for 10% for non-users (Table, 12), but the difference was not statistically significant (P- value 0.20).

Table 12: Selected child morbidity indicators:

Variable	Users		Non-users		P-value
	No	%	No	%	
Anemia:					
Yes	39	73.6	31	62	0.208
No	14	26.4	19	38	
Jaundice at birth:					
Yes	17	11.3	16	10.7	0.854
No	133	88.7	134	89.3	
Child health care >7 times at last year:					
Yes	34	23.3	31	21.1	0.740
No	112	76.7	96	78.9	
Child hospitalization:					
Yes	42	28	34	22.7	0.288
No	108	72	116	77.3	
Physical examination of the child:					
Respiratory diseases:					
No respiratory diseases detected	126	84	113	75.3	0.05*
URTI(1)	12	8	26	17.3	
Wheezy chest	12	8	11	7.3	
Gastrointestinal tract disease:					
Yes	7	4.7	8	5.3	0.791
No	143	95.3	142	94.7	
Skin diseases:					
Yes	9	6	15	10	0.202
No	141	94	135	90	

*Statistically significant

(1) URTI: Upper Respiratory Tract Infection

Child abuse:

Table (13) clarifies the abusive behavior of mothers towards their children. Most frequently reported behavior is physical abuse (beating the child) which constituted 50.7%. There was a significant relationship between physical abuse and the research groups, 43.3% of users had beaten their children while 58% of non-users did so (P-value 0.01). Regarding emotional abuse, quarter of mothers stated that they used to

curse the day the child was born. In the area of child physical neglect 23% of mothers stated that they leave the child playing bare-footed in the street, 16% and 18.7% for users and non-users respectively and the difference did not reach a statistical significance (P-value 0.54). Falling down form 19.3% for users, 26.7% for non-users had injured children and the difference was not statistical significant (P-value 0.13). Neglect of safety, 2.7% drink kerosene, 2.3% drink chlorine and 6.3% had burnt while the mother was at home. Mothers permitted their children to drop out of school to seek a job constituted 2%. There were no significant differences between users and non-users for other abusive behavior towards their children.

Table 13: Mother's abusive and neglectful behavior towards their children

Variable	Users		Non-users		P-value
	No.	%	No.	%	
Cursing the child:					
Yes	38	25.3	38	25.3	1.00
No	112	74.7	112	74.7	
Beating the child:					
Yes	65	43.3	87	58	0.01*
No	85	56.7	63	42	
Playing bare-footed in the street:					
Yes	24	16	28	18.7	0.54
No	126	84	122	81.3	
Injured by falling down:					
Yes	29	19.3	40	26.7	0.13
No	121	80.7	110	73.3	
Accidental burning of the child:					
Yes	10	6.7	9	6	0.81
No	140	93.3	141	94	

**Statistically significant*

Chapter V

Discussion

Most research has interest to measure program impact of changes in fertility and contraceptive use, but fewer research studies measure improved health. This is due to the fact that changes in health status are difficult to measure (Foreit and Freijka, 1998). The health of mothers and children should be our first concern as the director-general of WHO said in her speech in the 22nd international congress of pediatrics in Amsterdam:

"We should continue to put children first, the wealth of a nation can be judged by the wealth of its members. Likewise, the health of the world should be judged by the health of its most vulnerable population. That means children, and especially children of developing world" (Gaber, 1998).

To the best of my knowledge, this is the first study that shows the impact of family planning on child health conducted in Palestine.

It is worth reminding the reader that the presented information is based on 150 cases (users of FP) and 150 controls (non-users of FP) and the results are thought to contribute in improving the family planning services and consequently the child health. Interview questionnaire were the key instrument in the study on impact of family planning on child health besides clinical examination of the child and information obtained from health documents. This combination of data sources enforces certain points as the birth weight which, is told by the mother and confirmed from the health records. The response rate was high because mothers were satisfied when their children were subjected to routine clinical examination.

This chapter presents discussion of the impact of family planning on child health in a comparative way. It is well known that mother health surely affect her child health not only after delivery of the child but also while the fetus in uterus and even before.

Accordingly, the researcher discusses firstly the mother health and focusing on obstetric history as shown latter on. Secondly, the researcher tackles the child health from birth till the time of interview. Developmental history and physical examination of the child were also illustrated. Also, the chapter illustrates the other side of child health, the hidden part that is the child maltreatment and abusive behaviors.

Maternal variables:

Marital age:

This study revealed that approximately two thirds of women of study population (63%) got married before 18 years old. Currently, the period of childhood extends to 18 years according to WHO, this means most of the study women get married while they are still children. A study was conducted in Palestine have indicated 37% of Palestinian women got married before 17 years (Aghabekian and Khatib, 1998) meanwhile, this study have indicated that 46.3% of female got married before 17 years. As mentioned earlier there is a difference where the percentage of early marriage is higher in the present study because the former study was conducted in Palestine while, the present study reflects the Gaza Strip situation. Also two thirds of this study subjects were selected from a village and a camp where girls got married earlier. It is a common belief among Palestinian that girls should marry at early age to avoid celibacy if they got older than 20. Young girls are not mature enough to carry out the responsibilities of home, childbearing and childcare and in fact, they need to be cared of. So, I think to recommend for policy makers to adopt programs for health education directed to adolescents to discourage girls to marry before 18 years. Reproductive health education for secondary schools for males and females and also, reproductive health education in the primary health centers and in the media are essential measures that could increase people's awareness about this issue. This study revealed that early marriage is higher

This study revealed that early marriage is higher among users than non-users, 67.3% & 60.7% respectively. It could be inferred that, users got married earlier and decide to practice family planning latter. During counseling, the family planning users should be advised to avoid the early marriage problems with their daughters. Premarital counseling is recommended and counseling services need to be available.

Age at first delivery:

This study illustrates that 41% of mothers have delivered their first baby before they reach their 19 years (42% & 40% for users and non-users respectively). Aghabekian V. referred that Haj and others stated that 30-39% of married women conceive prior to 18 years old (Aghabekian and Khatib, 1998). The literature indicates that risk of maternal deaths among those aged 15-19 years is three times as those aged 20-24 years, and five times for those aged over 35 (Kassas, 1994).

It is already known that if a child miss his mother, it will be reflected negatively on his/her health physically and emotionally with consequent deprivation and dissociation sequelae.

Postponing first birth until women exceeds 18 years of age decreases the risk of death for first born by 20% (WHO, 2001). Therefore, for the sake of health of mothers and children, it is encouraged to postpone the age of first pregnancy after 18 years and this can be implemented by delaying the age of marriage after 18 years as already stated.

Family size and the practice of family planning:

Recently, there has been a continuous decline of total fertility rate from 1994 to 2000 (TFR=7.4 in 1994 to 5.58 in 1998 and 4.31 in 2000), at Palestine. TFR is higher in the Gaza Strip than the West Bank 5.4 & 3.8 at year 2000 respectively (MOH, 2001). The fertility rate of the present study conducted in the Gaza Strip in year 2001 shows further decline, which reached 4.51. This smooth drop of fertility rate over the last seven years

could be contributed by the efforts implemented by family planning programs.

Reviewing the literature shows that the fertility rate in the Gaza Strip is still one of the highest in the World where, in Jordan TFR=3.8, in Syria TFR=3.7 (1999), in Lebanon TFR=2.5 (1996), in Egypt TFR=3.3 and in Cyprus TFR=2 (1997) (MoH, 2001). So, we need more effort in this regard to reach the target of neighbors.

This study revealed unexpected finding where, users of family planning have higher fertility rates than nonusers. This reflects an important point in the implementation of family planning programs where, it seems that mothers decide to practice family planning when they already have many children. To improve this area measures should be taken by the authorized personnel and policy makers to focus more on this issue.

Again, reproductive health education is fruitful especially for adolescents of both sexes. This should be done through different channels such as media, schools, health centers, campaigns and support groups, keeping in mind the religious and social situation we do live.

It is clear in the literature that fertility rate is lower among the educated women than among the less educated (MoH, 1999) and this exactly coincides with the results of this study which, revealed a low percentage of university graduated mothers having more than 6. Highly educated mothers usually got married proportionately later than the less educated. So, education per se helps indirectly in controlling the number of children the mothers might have.

Type of contraceptive methods:

Among the users, results of contraceptive methods were 42.7% for loop, 26.7% for pills and 18.7% for condoms which, approximate the findings of a research conducted at year 2000 where, 49.2% for loop, 28.3% for pills and 17% for condoms (Mousa, 2000). But findings of present study are dissimilar with that conducted earlier by UNRWA where,

67% of future users wish to use loop and 12% for pills (Aghabekian and Khatib, 1998). This difference is wide because UNRWA conducted the study on refugees' camps only while, the former two studies were conducted in the different localities of the Gaza Strip. Also, the time may affect the results where UNRWA conducted the study in 1993 and the recent study conducted in 2001, eight years apart.

Reviewing literature have indicated that the failure rate of the contraceptive methods ranges from 0.1-8%, 0.4-2.5% and 2-12% for pills, loop and condom respectively. The IUD is effective and safe method and has less failure rates (Evans and Huenzo, 1997). Condom is also safe and protects against STD's, which is not prevalent in our society. Condom needs husband counseling and compliance. LAM is an effective and reliable method of birth control for the first 6 months postpartum if the mother has breast-fed her baby day and night also, breast-feeding is essential for baby's health and his mother. The discussion above raises recommendation for decision-makers at MoH to support the training programs for female doctors and nurses regarding gynecological examination of clients and maneuver of insertion of IUD will be invaluable.

Parity:

Findings show that 34.3% of participants have 6 or more deliveries and the users were higher than the non-users. Reviewing the literature demonstrates that 38.6% of the studied population have 6 or more children in a research which was conducted in the Gaza Strip (Mousa, 2000). Experiencing 6 and more children is considered as an early sign of high risk pregnancy according to WHO. This means that we are offering family-planning appliances for couples whom already have experienced frequent deliveries and are at risk. It is recommended to focus our efforts on women of younger age.

Birth intervals:

The present study has indicated that 70.7% among users were spacing their birth by 2 years and more while, 29.3% of non-users spacing for 2 years and more. Short birth intervals has a negative effect on the coming infant and the preceding child as well.

When the birth spacing is less than 2 years, the chance of dying before age of 5 years is increased by 50% and death of an infant before one year is 60-70% (WHO, 2001).

When lactating mothers get pregnancy, the chance of breast-feeding and the mother care of the present child is reduced (WHO, 2001).

The Islamic religion recommends breast-feeding for 2 years if the mothers want so, proponents of family planning said that this mean spacing for 2 years. Encouraging breast-feeding reflects positively on mother and child health. Post-partum home visits are recommended to teach the mothers the effective way of breast-feeding and to offer advice about family planning if the breast-feeding is incomplete. Also, encouragement of family planning may constitute an integral part during antenatal care.

Place of delivery:

Half of mothers of the study population had delivered their babies at Government Shifa Hospital. The other half had delivered at UNRWA clinics, private doctors and private Hospitals. Reviewing the literature clarifies that a study was conducted on northern area of the Gaza Strip in 1997 shows that 43% of women had delivered their babies at Shifa Hospital (Abed et al, 1997).

Delivery by a well-trained personnel is helpful for the mother and her baby, decrease the maternal and infant mortality and morbidity. One of the rules of health insurance system of Ministry of Health in Palestine stated that insured women have to deliver free of charge at Government hospital and those without health insurance have to pay.

It is highly recommended to policy-makers at the MoH for the sake of our children and mothers to offer health services including antenatal, perinatal and postnatal care to pregnant women freely, as health-care of the child start while he is in uterus. And in case of limited resources, delivery of high-risk pregnancies hoped to be without pay in the government Hospital, if those who can't to pay have no social affair insurance. meanwhile supporting safe delivery at primary health centers.

Delivery status:

The findings of this study revealed that 12% of deliveries were carried out by caesarian section. The users experienced caesarian section at 14% while non-users at 10%.

Reviewing the literature shows that 8.4% of deliveries were by caesarian section as clarified by a study conducted on the northern area of the Gaza Strip in 1997 (Abed etal, 1997). The study shows that users have experienced caesarian section more than non-users. Because of that, they decide to space their pregnancies. Previous caesarian section is considered one of the risks of pregnancy so, mothers with history of caesarian section are suitable candidates for family planning.

In addition, the findings of this study show that 94% of deliveries were at term, literature review concluded that 96% of deliveries in northern area of the Gaza Strip were at term (Abed etal, 1997), the two results are approximately similar. There were 6% of premature or postmature deliveries, which constitute a risk for the child.

Child sex and the practice of family planning:

The study revealed that users had boys more than non-users, 28.3% for the former and 24.7% for the latter. Although these variations were statistically not significant they could reflect that women accept to practice family planning after they had delivered boys. These findings are congruent with the results of a study conducted in rural areas

in Egypt which, show that women with more sons are more likely to use contraception (Gadalla, McCarthy and Campbell, 1985).

History of abortion, stillbirth and child missing:

The participants of this study reported that they had suffered abortion in their life at least once at a rate of 41.7%. The percentage of non-users who gave history for abortion was higher than those of users but did not reach a statistical significance. A possible explanation is that non-users did not attend family planning to replace the already lost one. Literature review shows that spontaneous abortion occurs in about 30% of all pregnancies (May and Mahlmeister, 1994). It is worth remembering that ICPD stated that abortion should not be promoted as a method of family planning (UNFPA, 1998).

The study findings revealed that 5% of mothers suffered stillbirth at least once and non-users experience stillbirth more than users but did not reach a statistical significant. Literature review reveals that stillbirth rate is 10.3/1000 in Palestine (MoH, 1999). Also, the non-users suffer bereavement due to missing of at least one child more than users. In this area, we have to recommend that unfortunate mothers who has experienced one of the above conditions like abortion or stillbirth, should be fully investigated in trial to discover the possible causative factors. Mothers suffered one of these conditions are less liable to practice family planning because they like to replace the lost. Programs for revealing causes of abortion and stillbirth should be encouraged.

Women health status:

The study findings have indicated that 92% of mothers were free of chronic diseases. Mothers having hypertension constituted 4.7% of study women. The overall prevalence rate of hypertension among Palestinian people was 1.5% in 1999 and the prevalence rate among persons age 40 years and above was 6.1% (MoH, 2001).

Hypertension during pregnancy increases maternal and child morbidity and mortality. The literature shows that 0.3% of women of reproductive age are diabetic and in 0.2%-0.3% of all pregnancies, women are expected to have diabetes prior to conception. Gestational diabetes mellitus complicates 1%-12% of all pregnancies. Gestational diabetes mellitus according to WHO definition is the term restricted to pregnant women in whom the onset of glucose intolerance first occurs during pregnancy (Mustafa and Sandhu, 1998). Prevalence rate of diabetes mellitus is about 9% in Palestine (MoH, 2001). The untreated diabetic mothers were at increased risk of peri-natal mortality and morbidity. Diabetes mellitus is present in the current study population at a rate of 1% which is congruent with a study conducted in Bahrain (Mustafa and sandhu, 1998). Because of serious complications of diabetes on mother and the child it is recommended for strict control of blood glucose during pregnancy to avoid the complications associated with the delivery of Infant of a Diabetic Mother (IDM).

Anemia and pregnancy:

Women are liable to anemia during pregnancy because of two factors. First, they have higher requirements of iron and folate (Fleming, 1988). The second, the plasma volume increases progressively during pregnancy reaching a peak during the third trimester, which is around 45% or 1250 ml above the non-pregnant values (Letsky and Redman, 1988). In this area of this study, the researcher did not test hemoglobin for mothers, but the data was collected by asking mothers about their hemoglobin level while they were pregnant with the concerned child in the third trimester. So, the result is subjected to recall bias and reduce the explanatory force of the analysis. The study has indicated that 75.9% of mothers were anemic during the third trimester, the anemia among non-users is higher than among users. This is explained by the fact that short spaced deliveries of non-users exhaust the mothers and deplete the iron body stores.

Reviewing the literature explores that the prevalence of anemia among Palestinian pregnant women is 55% (MoH, 2001). A study was conducted in Upper Egypt has indicated an anemia level among pregnant women of 73.5% (Arafa, et al 1998). The findings of this study are similar to that conducted in Egypt but disagrees with results presents in the annual report of the MoH.

It is worth mentioning that, the Center of Disease Control defined anemia of pregnancy as less than 11gm/dl. in the first and third trimester and less than 10.5 gm/dl. in the second trimester (Cunningham et al, 1994) which, agreed by the two health authorities in Palestine, MoH and UNRWA.

The impact of maternal anemia on infant is disastrous. If anemia persists through out pregnancy, fetal hypoxia results and retarded intrauterine growth occur. The prevalence of low birth weight is directly related to the severity of maternal anemia. The cause of anemia may have directly adverse effects on the fetus, where folate deficiency is itself a cause of premature delivery. LBW is strongly associated with poor immunity, which lead in turn to neonatal infections and lead to further depression of the immunity. As a result of maternal anemia the infant enter in a vicious circle of poor immunity, infection and malnutrition (Fleming, 1988).

Fortunately, anemia is a treatable condition and can easily be combated. We recommend a reduction in the prevalence of anemia. This can be accomplished by improving antenatal care, iron and folic acid supplies and treatment of contributing factors as parasitic infestation. The researcher disagrees with fortification of bread with iron to resolve the problem of prevalent anemia, as excessive iron supplementation for males will lead to iron overload (Zilva, Pannall and Mayne, 1988).

Child health:

Child health status (well-being) indicators:

Birth weight:

The normal average birth weight of a newborn at birth is 3.25 kg (Needlman, 1996). Birth weight of 2499 gm. and less is considered a Low Birth Weight (LBW) (Hutchison and Cockburn, 1986). The study findings revealed that 4.7% of concerned children were of low birth weight and 95.3% of children have acceptable weights (2.5 kg and more) and the birth weight of children of users and non-users were similar. This could be explained by the fact that the mothers of both research groups were living under the same socioeconomic circumstances. The MoH annual report reveals that Low birth weight was about 3% which, was documented by Health Management Information System (HMIS) records and 5.5% at health center infants records (MoH, 2001). Newborns with low birth weights in Palestine on 1995 were estimated at 6% (Gaber, 1998). The results of this study were more or less approximate the findings of others as stated above. The birth weight of Palestinian children is improving from 1995 to 2001. This could be resulted from the development of new policies for child health and the great efforts done by the health personnel.

The prevalence of low birth weight infants in the neighboring countries were 9% in Egypt, 8% in Lebanon, 7% in Syria, 6% in Palestine and 2% in Jordan (Gaber, 1998). Therefore the birth weights of Palestinian infants lie in the upper half of scale. The prevalence of low birth weights of infants in Iraq was 24% and in Yemen it was 47% (Gaber, 1998).

The prevalence of LBW is related directly to severity of maternal anemia (Fleming, 1988). The findings of this study showed that 71.4% of LBW infants' mother were anemic. Anemia of pregnancy is a risk factor for the baby and also is a marker of poor nutrition and decreased the oxygen delivery to the fetus (Arafa, et al 1998). These factors associated with delivery of a LBW baby.

Growth and development:

Assessment of growth is a good indicator for the child health status and could reflect the primary health care and nutrition accessibility.

An acute undernutrition reduces the weight for age and weight for height curves (wasting). After several months of undernutrition the height for age curve also decreases (stunting) (Needlman, 1996).

***Weight/age:** The findings of this study revealed that the accepted weight for age of the children which, lies above 5th percentile was 95%. The literature review describes that 95% of weight for age of children in Palestine lies above 5th percentile (Gaber, 1998). The latter study was conducted in year 1995 in Palestine and the former study was conducted in the Gaza strip only at year 2001.

The present study shows also that the prevalence of children whose weights for age below the 10th percentile constituted 10%. The weight for age of children below 10th percentile for non-users was more prevalent than those of users and reaches a statistical significance. A community based survey was conducted in 1995 by Terre Des Homes in the Gaza Strip revealed that 15.1% of children under 5 years old were of low weight/age (less than 5th percentile) (MoH, 1999).

***Height/age:** Low height for age is considered an indicator of chronic undernutrition over an extended period (stunting) (Needlman, 1996). The present study shows that the prevalence of children whose heights for age below the 10th percentile constitutes 10%. The height for age of children below 10th percentile for non-users was more prevalent than those of users but did not reach a statistical significance. Terres Des Homes survey in the Gaza Strip shows that 14.2% of children under 5 years are of low height/age (less than 5th percentile) (MoH, 1999).

***Weight/height:** Low weight for height is an indicator of current acute undernutrition (wasting). This study shows that of the children whose weight for height less than 10th percentile constitute about 10.4%. However, the children of non-users are healthier than the children of users in this regard.

Family planning services through limiting fertility rate and reducing the number of children improve health of children through giving them chance to have access to adequate food and more health opportunities.

I would like to recommend in this field for policy makers to develop training programs for medical and paramedical staff about nutritional issues and to pay attention for children who failed to thrive. It is already known that the most power tool in growth assessment is the growth chart and by reviewing the growth charts presented in the primary health care arise some questions. Firstly, these charts are only for children up to 3 years, what about the older children? Secondly, height velocity represents the current dynamics of growth much better than single measurement, which reflects the previous growth. Accordingly, the researcher recommends monitoring growth of the Palestinian children by using height velocity assessment chart (Annex 11) for older children especially primary school children.

Age of sitting and walking:

About 67.1% of children of family planning users have sat before 7 months of age meanwhile, 71.3% of children of non-users have sat before 7 months. Normally the child can sit alone for a short period between 6-8 months (Hagerman, 1999) and the mean age of sitting for the children of the study population was 6.28 months, which reflects a positive health indicator.

The child can walk independently at age one year (Hagerman, 1999), while the mean age of walking for children of study population was 12.58 months, which more or less

congruent with the literature. Children of the study population who have walked at one year and less for non-users were 58.7% and for users were 56%.

Breast-feeding status:

The benefits of breast-feeding for both child and mother have been widely documented (Kamel, et al 1997). The data of this study shows that 95.3% of participant mothers breast-fed their children compared with a study carried out in Alexandria which showed a breast-feeding rate of 63.3% (Kamel, et al 1997). This high prevalence reflects the degree of knowledge and alert among Palestinian mothers, commitments towards their children and as the results of educational programs promoted by the Palestinian health providers. The users breast-feed their infants at higher rate than the non-users. Non-users may get pregnant during the time of the study, which cuts off the breast-feeding. MoH promotes exclusive breast-feeding for the first 4 months (PCBS, 2000).

According to WHO recommendations, all infants should be exclusively breast-fed from birth to 4-6 months (Kamel, et al 1997). This study reported that 70.3% of mothers exclusively breast-feed their infants. A study conducted in Alexandria revealed an exclusive breast-feeding at a rate of 42.2% and the researcher stated that one of his goals to raise the exclusive breast-feeding to 80% (Kamel, et al 1997). Moreover, continued breast-feeding rate for one year was at 64.4% for Alexandria study, which is nearly similar to this study (67%). A study was conducted in the Gaza Strip showed that continued breast-feeding for more than one year in 1987 revealed that 48% of mothers breast-fed their infants while, 72% of mothers did so in year 1989 (Schoenbaum, Tulchinsky and Abed, 1993). Regarding duration of breast-feeding for more than one year, the percentage of mothers of this study is more than the study conducted at 1987 and less than the study conducted at 1989.

Breast-feeding act in beneficial circle firstly, no one casting doubt about the benefits of breast-feeding for both mother and her child. It provides the child with homogenous nutrition, immunological protection, contain anti-infectious agents and it gives emotional satisfaction for both mother and child. Secondly, it helps uterine involution and reduces post-partum bleeding. Lastly, the most important it acts as a contraceptive especially for the first 6 months post-partum. Accordingly, breast-feeding give chance for the mother to take cares for herself and her child and did not burden by another pregnancy and another new coming who will displace the older child for whom mother-care is still essential.

Health education programs implemented by MoH should be enforced especially for the duration of breast-feeding. The population needs to realize the wide benefits of breast-feeding including nutritional, immunological, and emotional. Literature aspects, recommends that no food or drink be given before 4 months except breast-feeding, any supplements given before 4 months could hinder the maintenance of breast-feeding and also give chance for mothers to become pregnant (Kamel, et al 1997).

Selected child morbidity indicators:

Anemia:

Iron Deficiency Anemia (IDA) is a serious worldwide public health problem. In the countries of the Eastern Mediterranean Region the prevalence of anemia in preschool children lies between 20-60% (Verster and Van, 1995).

The child aged 6-36 months is considered to be anemic if his hemoglobin drops below 11gm. /dl. The main health providers in Palestine including the MoH and UNRWA agreed on this cut off point (UNRWA, 2000).

A study was conducted by UNRWA in 1998 to determine the prevalence of anemia among children 0-3 years. In certain countries revealed important findings, were

74.9%, 49.7%, 35.9%, 29.6% and 28% in Gaza Strip, West Bank, Jordan, Lebanon and Syria respectively (UNRWA, 2000). The prevalence of anemia among children was 70% in the Gaza Strip (MoH, 1999).

The present study revealed 68% of children were anemic which, is less than prevalence of anemia in the Gaza Strip (74.9%) as stated above. Although, it is not a representative sample it is compatible with the previous study. This slight decline may be attributed to programs implemented by MoH to combat anemia. The prevalence of anemia among users' children was higher than of the prevalence among non-users' children. This may attribute to the increased number of children the users have and consequently reduced accessibility to nutritious food.

The prevalence of anemic children in the Gaza Strip is still the highest among the surrounding countries. If the causes are identified we can put a framework to reduce this prevalence and implement preventive measures. These causes as expected by the researcher are firstly, increased fertility rate resulting in many children the family has, so the accessibility of each child to nutritious food is reduced. Secondly, hard economic situation due to decreased monthly income. Thirdly, high prevalence of parasitic infestation in studied areas among children which may result in malabsorption. Fourthly, milk (human or cow) is poor of iron and exclusive breast-feeding for a long period without food supplementation resulting in anemia. Fifth and lastly, the habit of drinking tea after meals reduce absorption of iron. It is recommended to reduce prevalence of anemia through combating the above factors.

Relationship between child hemoglobin and mother hemoglobin:

The present study shows a significant association between blood hemoglobin levels of the mothers and their children that anemic mother's child may suffer anemia.

The findings of this study was confirmed by reviewing literature which discloses that maternal anemia has frequently been considered to lead to a lower level of stored iron in the fetus and so to an increased susceptibility to later iron deficiency anemia (Hutchinson and Cockburn, 1986). Also, this relationship between mother and child anemia could be due to confounder such as socioeconomic status, poverty, habit of drinking tea or juice after meals, parasitic infestations or/and associated chronic diseases may the child or his mother has.

It is worth to note that premature, low birth weight infants and twins are particularly likely to develop IDA because smaller infants grow rapidly so they exhaust their iron stores (Hutchinson and Cockburn, 1986). A study was conducted in Alexandria showed that the risk of prematurity was higher with anemic mothers (Arafa, et al 1998). So, there is a chance that anemic mother could deliver a low birth weight baby with consequent development of iron deficiency anemia.

It is highly recommended in this area of the benefits of prophylactic treatment of anemia especially for teen-age girls whom will be the future mothers. Also, to replenish the iron stores of pregnant mothers to avoid development of anemia in the coming child. If we do so, we will hit two birds with one stone.

Jaundice at birth:

Jaundice is a relatively common neonatal problem and 65% of newborns develop clinical jaundice with a bilirubin level below 5 mg./dl during the first week of life (Thilo and Rosenberg, 1999). Some children develop physiological jaundice on the second or third day of life and the icterus fades in 7-10 days (Hutchinson and Cockburn, 1986).

This study shows that 11% of children suffered jaundice at birth, with no significant differences between children of users and non-users.

Child health care and hospitalization at last year:

The findings of this study show that 97.7% of children had received some form of health care during the last year while, 22.2% of them were treated for more than seven times. Children of users received frequent health care slightly more than children of non-users. Moreover, a quarter of the studied children was ill to worth hospitalization, users' children were admitted more frequently than non-users' children. There is no apparent interpretation for these observations and further research is needed in this field.

Physical examination of the child:

***Respiratory diseases:**

About 79.75% of children were clinically free from respiratory diseases and 20.25% of them had suffered respiratory diseases at time of examination. Non-users' children are significantly more susceptible to Upper Respiratory Tract Infection (URTI) than users' children.

Mothers not practicing family planning were usually pregnant or have a younger child so, they can not give adequate care of the concerned child. PCBS reported a prevalence rate of Acute Respiratory Infection (ARI) at 25.4% among children under 5 years old (MoH, 1999). This prevalence rate is congruent with this study.

Approximately seven percent of children suffered some type of chronic disorders of the lower respiratory system (Larsen, et al 1999) which, confirm our findings where, 7.6% of studied children have wheezy chest at time of examination.

A study was conducted in Egypt revealed that bronchial asthma has been estimated to affect up to 8% of children (Bassili, et al 1998).

As pneumonia and other respiratory diseases is the second leading cause of death in the age group 1-4 years (MoH, 2001) and to reduce child morbidity and mortality

secondary to respiratory infection, it is recommended for appropriate diagnosis and treatment through intensive educational courses for general practitioners at PHC.

***Alimentary tract disorders:**

This study shows that 5% of children had suffered some form of GIT disease. Non-users' children have suffered GIT disorders slightly more than users' children, which may due to lack of health care. Looking through child health file revealed a high proportion of them had received some form of medicine for GIT troubles.

***Skin diseases:**

This study shows that 8% of children have some type of skin disease, most frequently impetigo. The data was collected at August and because of elevated climate temperature and increased humidity the prevalence of skin infection is increased. Non-users' children are more liable to skin infection than users' children. Mothers not practicing family planning have another young child who received most of health care on cost of concerned child, so reduced level of cleanliness is attributed to high percentage of non-users children's skin infection.

Child abuse and neglect:

The researcher would like to assess not only the impact of family planning on physical child health but also on emotional and psychological child health. The child abuse and neglect is a growing problem that necessitates child protection. The data available suggest that 1-1.5% of American children are abused or neglected annually. Child abuse has multifactorial influences like individual, family, social and psychological that work together to contribute to the problem (Krugman and Sirotnak, 1999).

Emotional abuse has been recognized as ignoring, rejection or cursing. In this study the researcher selected cursing as an example of child emotional abuse where about a

quarter of mothers curse their children. Users and non-users are equally similar in this behavior towards their children.

A study was conducted in Alexandria showed that 27.1% of mothers cursed the day the child was born, which is similar to this result (Atta and Youssef, 1998). Gazans and citizens of Alexandria are living alongside of Mediterranean Sea sharing to some extent same behavior so, the results of the two studies are nearly close together.

Physical abuse of children ranges from mild beating, moderate beating of the child with a stick to severe beating, which left bruises fractures or injuries. Putting pepper in the mouth of the child and burning the child with hot water is another form of physical abuse. The mothers who enrolled in the present study were asked about moderate beating of their children, 50.7% of mothers said they beat their children. There is a significant relationship between the practice of family planning and act of child physical abuse. The study revealed that non-users beat their children more than users. Mothers who do not practice family planning and have a younger child complain of stress and anxiety which, is reflected negatively on the older one. Although, there are several factors contribute in the mother's abusive behavior like mother's age.

A previous study carried out in Alexandria revealed that 45.2% of mothers beat their children with stick or a belt (Atta and Youssef, 1998), Which is slightly less than the percentage of Gazan's mothers. The data collection was at time of severe stress due to Intifada, so the Gazan's mothers were subjected to anxiety. Therefore, results of this study should be taken cautiously and further research is needed in this area.

Neglectful behavior:

Physical neglect which, is the inability to provide a safe environment, necessary food, shelter and clothing in which the child can grow (Krugman and Sirotinak, 1999).

The study showed that 23% of caregiver mothers leave their children playing bare-footed in the street. The children of non-users are more susceptible to this type of physical neglect than users' children. Previous Alexandria study reported that 9% of women leave their children playing bare-footed in the street (Atta and Youssef, 1998). This wide gap between physical neglect behavior of the 2 studies emphasizes the stress factor under which the Palestinian women live.

Another examples of physical neglect are, injury of the child by falling down in the presence of mother. Non-users' children are injured more frequently than users' children. There are no significant differences between non-users and users' children regarding accidental burning of the child.

Samba and Bwibo observed the relationship between practicing family planning and mothers' abusive behaviors towards their children. Mothers who maltreated their children were less likely to practice family planning (Atta and Youssef, 1998), these observation are actually coincide with the results of this study.

The researcher stated that *"Family planning activities appear to be an effective tool in reducing the risk of child maltreatment by timing pregnancies in relation to the mother's age"* (Atta and Youssef, 1998). Again these observations support the result of this which, uncover a significant association between physical abuse of children and practice of family planning.

Mothers are not alert about abusing their children they said, "the child should be punished if he/she does wrong". So, developing educational programs for mothers in trial to eliminate or reduce child abuse. Also, by practicing family planning, the burden of pregnancy and infant care is decreased which relatively relieve stress on the mothers and ameliorate their behavior towards her children.

Chapter VI

Conclusion and Recommendations

Conclusion:

The purpose of this study was to assess the impact of family planning services implemented in the Gaza Strip on child health. The age of the studied children was 2-3 years and the mean age of their mothers was 28.9 years. Slightly less than half of participant women get married before 17 years old. The users of family planning usually get married earlier than non-users and consequently they delivered their first baby also earlier.

Users of family planning were significantly of higher parities than non-users consequently, users have a significant more children than non-users. This means that family planning programs are coming late after the mother have already get many children and it will be fruitful to focus on younger age group. The users of family planning are significantly more likely to space their births for two years and more than non-users which, have to be encouraged and enforced through health education.

The research revealed that clients of family planning use the loop as the most frequent contraceptive method, followed by pills, then male condom and a small proportion of couples use other methods such as injections, LAM and safe period. Beside the benefits of contraceptive methods, every method has a failure rate to a certain extent as mentioned before in the literature and also, has side effect. In this area, the researcher emphasis two methods firstly, LAM is a natural method which has a benefit for both child and mother. Health education and social awareness for contraceptive method especially LAM and male condom will be invaluable.

The study revealed that three quarters of mothers were anemic when they were pregnant with the concerned child in the third trimester. The prevalence of anemia among non-

users is higher than that of users. The non-users are exposed to the burden of short spaced pregnancies, which deplete their body iron stores. Child of anemic mother is more liable to develop anemia may be due to decreased delivery of iron to the baby during intrauterine life and/or because both of them living in the same socioeconomic environment. Hence, the importance of antenatal care and iron supplementation to the mother in concordance to discourage frequent and short spaced pregnancies through family planning programs will enhance the child health.

The prevalence of abortion, stillbirth and child missing among non-users are higher than users. So, women suffered abortion and stillbirth should be advised to postpone pregnancy and giving them chance for full clinical examination and laboratory investigations in trial to rule out any possible cause. This helps to improve the mother health and consequently her child health.

The prevalence of wasted children among user was significantly less than the prevalence among children of non-users. Also, the prevalence of stunting among children of users was less than those of non-users. This emphasizes that women practicing family planning have time to take care of their children and feed them well. On the contrary, children of mothers not practicing family planning are burden by new pregnancy or delivery of new one for whom the mother give him care on the cost of the older baby.

The present study shows that the majority of participants breast-feed their children. Meanwhile, users' mothers breast-fed their children slightly higher than non-users. And three quarters of users breast-fed the baby for a longer period (more than one year). As it is already known, breast-feeding programs should be strengthened because of it is importance for mother and child health.

Children of users are less susceptible to Upper Respiratory Tract Infection (URTI) than children of non-users. Also, children of users are less vulnerable to Gastro-Intestinal Diseases than children of non-users. This reflects the magnitude of mother-care and health-care to users' children more than those of non-users. Users' children have skin diseases to a lesser extent than non-users' children reflecting the degree of cleanliness, the users' children have. The above information motivate mothers to limit their fertility to the point that she can offer food, house, care and health services to the children she is already have. Consequently, the child morbidity and mortality may decline.

The study shows that more than half of mothers not practicing family planning (non-users) physically abused their children by beating them which was significantly higher than mothers who practice family planning (users). Regarding mothers' neglectful behavior, the non-users left their children playing bare-footed in the street more than children of users. Also, non-users children injured by falling down more frequently than children of users. This indicates that children of users are abused and neglected to a lesser degree than children of non-users. By other meaning family planning practice protect the children to a certain level from neglect and abuse, and accordingly family planning is worth to be implemented in the right way.

The research revealed that the majority of birth weights of the concerned children were within acceptable range. Moreover, the minority of low birth weights were equally distributed between users' and non-users' children. In this era, the birth weights of studied children have attained the national and global standards and reflect the efforts of maternal and child health department. The research has indicated that a quarter of studied children was emotionally abused and the prevalence of mothers abusing their children by cursing them was equally similar due to stress impact on mothers as a result

of cultural factors. Although, around ten percent of studied children were jaundiced at birth the difference between children of users and non-users were unremarkable.

The research revealed that two thirds of children were anemic. The prevalence of anemia among non-users' children was slightly less than prevalence of anemia among user' children, because the latter, their mothers are of higher fertility and having many children at home sharing them food. So, reduction of fertility is of prime goal to give chance for improvement of child health in this respect. This calls for starting family planning earlier.

The research has indicated that the prevalence of children of non-users who have sit before 7 months of age was higher than children of users. The study also show that prevalence of children of non-users who have walked at one year of age and less was higher than children of users. This may be of incidental finding as the sample was not large enough to estimate this point and further research is needed.

The research has indicated that about fifth of the examined children had received frequent health care for more than 7 times during the last year. The prevalence of non-users' children who had received health care was less than those of users' children. The study shows that a quarter of children was hospitalized and the non-users' children are less hospitalized than users' children.

Recommendations:

Health research in the field of reproductive health which carried out in the Gaza strip usually directed towards family planning services, methods and satisfaction and it is rarely studied the impact on child health. The child health is deeply rooted and closely associated with his/her mother health. So, taking care of mother health even in the premarital period will certainly reflect positively on child health. So, the following recommendations are suggested:

General recommendations:

- *The study explicitly shows that family planning does not only affect women health positively but also child health. Therefore this positive hint should be used for marketing family planning services. Special measures should be taken to tackle those who do not practice family planning.
- *Family planning services should be started early in the marital life and not postpone it after the women are having many children.
- *The role of different media is of paramount importance. So, educational programs to increase public, health professional and decision-makers awareness on benefits of reproductive health and family planning.
- *Improve provision of maternal and child health services.
- *Recommendation to incorporate the Palestinian males within family planning counseling. As the dominant nature of males have great role in decision of practicing family planning.

Recommendations for health care system:

- *Integration of the women and child health by supporting maternal and child health activities.

*Poor population especially high-risk pregnant women should have access to medical services.

*Suggestions for unifying child health records which in current use for all health providers.

*Suggestions for proper filing and documentation regarding child data as birth weight.

*Strengthen the cooperation between obstetricians and pediatricians in the field of newborn for mothers of high-risk pregnancy.

Recommendations to improve women health:

*Develop programs for full clinical and laboratory investigations for women suffered abortion and/or stillbirth.

*Recommendations for evaluation programs which combat anemia of women especially of reproductive age.

*Improve provision of obstetric facilities and well-trained personnel.

*Recommendations to postpone age of marriage after 18 years and discourage women to get pregnant after 35 year old.

Recommendations to improve child health:

*Strengthen the present programs for management of children who failed to thrive.

*Adopt a plan for using height velocity assessment chart for older children as well as growth charts for younger.

*Strengthening and evaluation of existing programs that combat anemia of children.

*Strengthen the medical staff with pediatricians having experience in neonatology.

*Supporting and promoting the breast-feeding practices.

Recommendations for education and training programs:

*Educational programs to expand the knowledge of adolescents about reproductive health.

- *Incorporating family planning education within antenatal as well as postnatal care.
- *Raising the basic obligatory education for girls to the secondary school (trial to prepare the future mothers).
- *Improve the level and increase the number of training programs for physicians and nurses in the field of family planning.
- *Enforcing health education programs for mothers about breast-feeding focusing on exclusive breast-feeding, duration of breast-feeding and the proper way of weaning.
- *Suggestions for developing educational programs for mothers in trial to eliminate or reduce the child abuse.

Research recommendations:

- *To conduct more research in this field.
- *To conduct study on large-scale sample as national survey

Chapter VII

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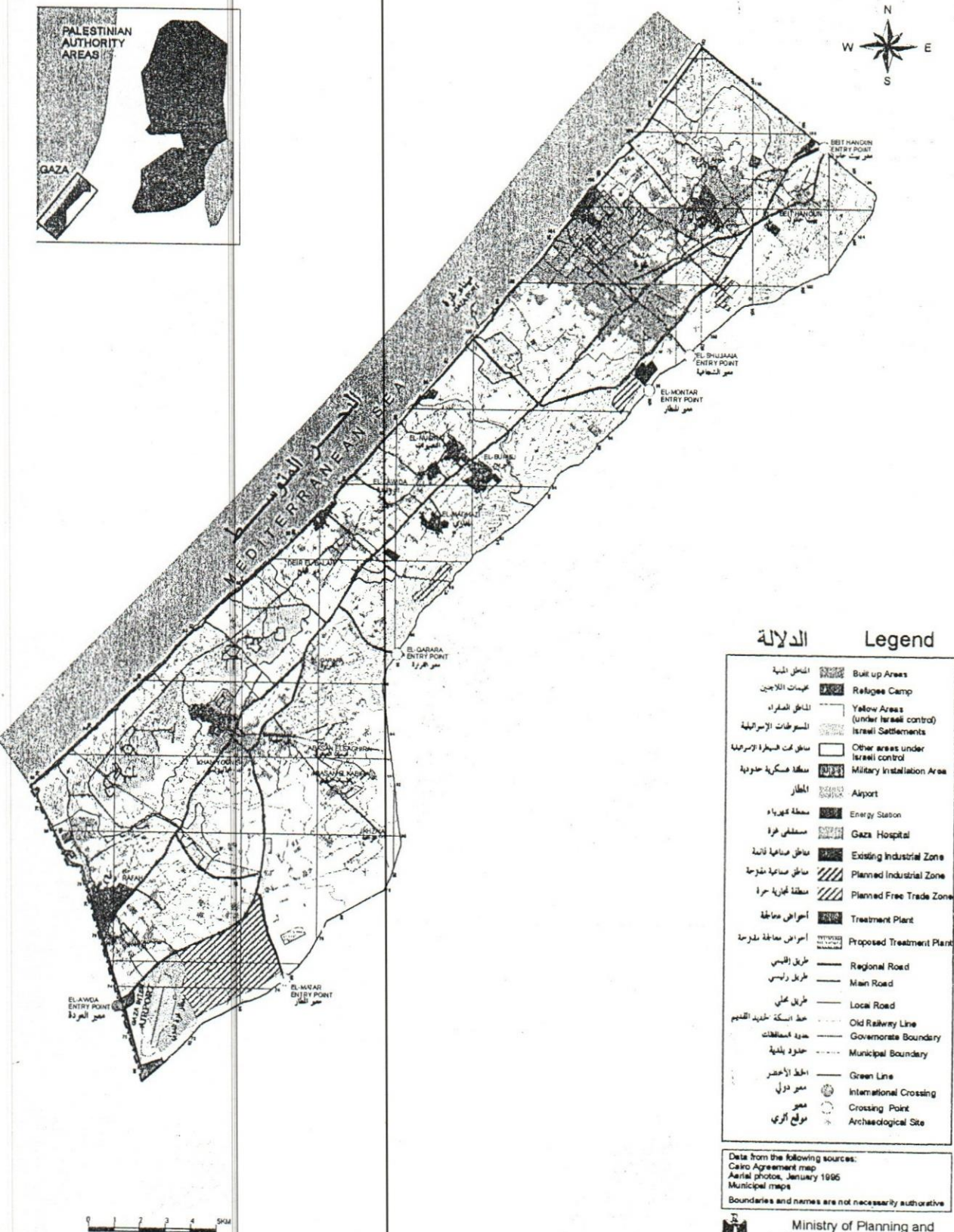
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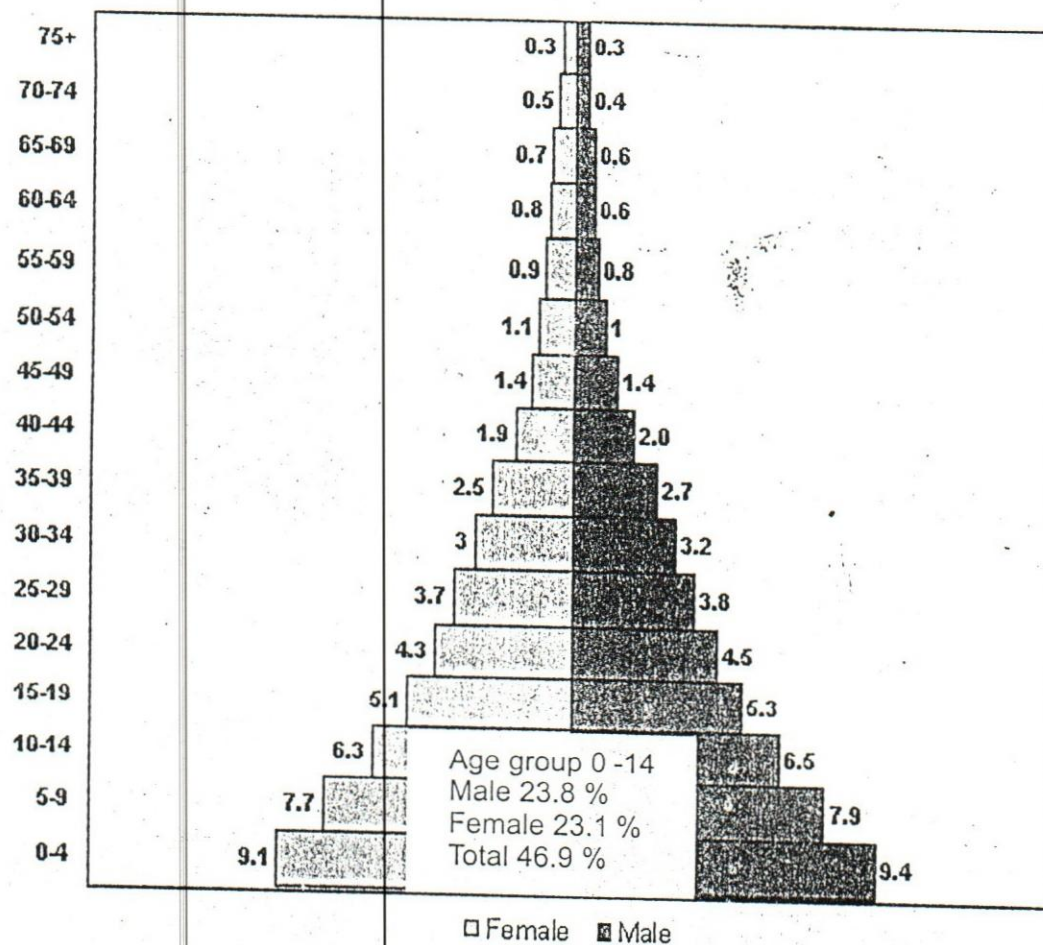
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Annexes

محافظات غزة
الخارطة الأساسية



Graph (2): Distribution of Population by age group and sex, Palestine, 2000



Source: MoH, Annual Report, 2001

1-2. Percentile standards for weight and height in boys birth to 3 years. (Reproduced, with permission, from Ross Laboratories, Columbus, OH. © 1982 Ross Laboratories.)

Figure 1-1. Percentile standards for weight and height in girls birth to 3 years. (Reproduced, with permission, from Ross Laboratories, Columbus, OH. © 1982 Ross Laboratories.)

Severity of malnutrition: Stunting and Wasting

Grade of malnutrition	Weight for age* (Wasting)	Height for age** (Stunting)	Weight for Height***
0, Normal	>90	>95	>90
1, Mild	75-90	90-95	81-90
2, Moderate	60-74	85-89	70-80
3, Severe	<60	<85	<70

Values represent percentage of median for age.

*Data from Gomez F, Galvan R, Frank S., et al: Mortality in second and third degree malnutrition. J Trop Pediatric 2:77, 1956.

**Data from Waterlow JC: Evolution of Kwashiorkor and marasmus. Lancet 2:217, 1974.

***Data from Waterlow JC: Classification and definition of protein-calorie malnutrition. Br Med J 3:566, 1972.

Source: Nelson, et al 1996.

stinian National Authority
istry of Health
inki Committee



السلطة الوطنية الفلسطينية
وزارة الصحة
لجنة هلسنكي

Date: 8/7/2001

التاريخ :

Ms/
ad Hamdan El-Hissi
ould like to inform you that the
mittee has discussed your application
ut:

السيد : جهاد حمدان الهسي
نفيد سيادتكم علما بأن اللجنة قد ناقشت
طلبكم حول موضوع:-

e Impact of Family Planning (FP)
ogram on Child Health. Gaza
ip, Palestine.

تأثير برامج تنظيم الاسرة على صحة الطفل في قطاع غزة

ts meeting on June 2001
t decided the following.

في جلستها المنعقدة بتاريخ يونيو 2001
وقد تم الاتفاق على :
الموافقة على البحث المذكور بعاليه

approve the above Mention

Signature

توقيع

Chairman

رئيس اللجنة

nditions:-
Valid for 2 years from the date of approval to start
t is Necessary to notify the committee in any change in the Admitted study Protocol
The Committee appreciate receiving one copy of your final research when it is completed



كلية الصحة العامة-فلسطين
School of Public Health
فلسطين-القدس



Annex: (7)

جامعة القدس

وزارة الصحة

2001/07/26

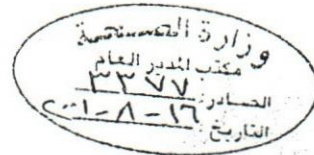
حضرة السيد/ الدكتور عماد طرويه المحترم
مدير عام وزارة الصحة
تحية طيبة وبعد...

الموضوع/ الطالب جهاد الهسي

نرجو من سيادتكم التكرم بالإيعاز لجهات الاختصاص نحو السماح للطالب جهاد حمدان الهسي
بكلية الصحة العامة "برنامج ماجستير الصحة العامة" بالدخول إلى مراكز الرعاية الصحية الأولية و
ذلك في إطار دراسته و هي بعنوان "تأثير برامج تنظيم الأسرة على صحة الطفل"

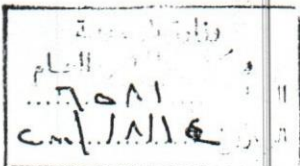
شاكرين لكم حسن تعاونكم

واقبلوا التحية ..



عميد كلية الصحة العامة

د. يحيى عابد



ع. اسد ص. لماري
١٥/٨/٠١



كلية الصحة العامة-فلسطين
School of Public Health
فلسطين-القدس



جامعة القدس

وزارة الصحة

2001/07/26

حضرة السيد/ الدكتور أيوب العالم المحترم
مدير برامج الصحة بوكالة الغوث الدولية
حفظه الله
تحية طيبة وبعد...

الموضوع/ الطالب جهاد الهسي

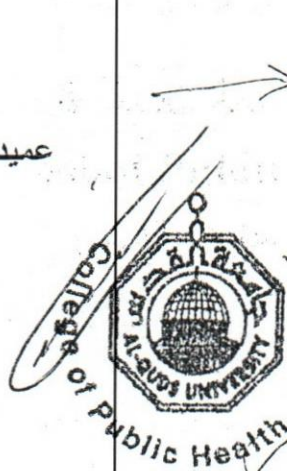
نرجو من سيادتكم التكرم بالإيعاز لجهات الاختصاص نحو السماح للطالب جهاد حمدان الهسي
بكلية الصحة العامة " برنامج ماجستير الصحة العامة" بالدخول إلى عيادات الوكالة بمنطقة المعسكرات
الوسطى و ذلك في إطار دراسته و هي بعنوان " تأثير برامج تنظيم الأسرة على صحة الطفل"

شاكرين لكم حسن تعاونكم

واقبلوا التحية ..

عميد كلية الصحة العامة

د. يحيى عابد



Approved
19/2/11

السادة اطهار صرا زهير
دير بلع / المناذر / البع / البع
الربار لشارع مع البع - البع
في إطار دراسته
وشكر



وزارة الصحة

كلية الصحة العامة-فلسطين
School of Public Health
فلسطين-القدس



جامعة القدس

2001/07/26

حضرة السيدة مريم زقوت المحترمة
مدير عام جمعية الثقافة و الفكر الحر
تحية طيبة وبعد...

الموضوع/ الطالب جهاد الهسي

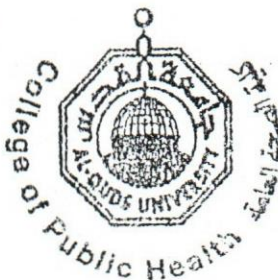
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واقبلوا التحية ..

عميد كلية الصحة العامة

د. يحيى عابد



Impact of Family Planning on Child Health in the Gaza Strip Questionnaire

Serial No-----:

Code No-----:

Dear client:

- Although your contribution in this research project will be kindly appreciated, your participation is optional.
- This study research is a part of my study at the School of Public Health, AL-Quds University for the degree of master in public health.
- The study includes filling a questionnaire and conducting a physical assessment of your child.
- The purpose of the study is to evaluate the impact of family planning programs on child health.
- Your participation might help in clarifying certain important points about your child health.
- The results and conclusions of this research might help decision-makers to take action towards improvement of your child health.
- Information you tell will be kept strictly confidential.
- Anonymity will be maintained.
- You may spend 20 minutes to fill the questionnaire, and if you feel uncomfortable, you can stop the interview. Additionally, I need 15 minutes for assessing your child.
- You are not obliged to answer any question you do not to. Also, non-participation in this study will not affect the care you might need.
- Please answer the questions as much as you can.

• Please answer the following questions as much as possible

*Date of interview----/----/----(day/month/year).

1-Research category: 1- Case 2- Control.

2-Service provider: 1- MOH 2- UNRWA. 3- NGO's.

3-Address: -----

-----Tel: -----.

4-Area of residency: 1- City. 2- Village. 3- Camp.

Personal data:

*File number: -----

5- Age of mother: -----, years.

6-Mother employment status-----.

7-Husband employment status-----.

8-Mother's years of education-----.

9-Husband's years of education-----.

10-Household monthly income----- (NIS).

11-How many children of your own do you have? -----Child (-----boy-----girl).

12-Do you currently practice Family Planning? 1-Yes 2-No.

If (Yes), answer question number 13, if (No) skip to question number 14.

13-Which method do you practice?

1-Contraceptive pills 5- Diaphragm 9-Others

2-IUD 6- Spermicide

3-Injectable 7- Female sterilization

4-Condom 8-Mixed

Obstetric data:

14-Marital age-----years.

15-Mother's age at first delivery-----years.

16-Age of youngest child-----months.

17-Age of oldest child-----years.

18-Number of pregnancies-----

19-Number of deliveries-----

20-Did you give birth a dead baby (stillbirth)? 1-Yes 2-No.

If (Yes), answer question 21, if (No) skip to question 22.

21-How many stillbirths did you deliver-----.

22-Had you aborted? 1-Yes 2-No.

If (Yes), answer question 23, if (No) skip to question 24

23-How many abortions did you have? -----.

24-Did you Miss children? 1-Yes 2-No

If (Yes) answer question 25 +26+27, if (No) skip to question 28

25-How many children did you miss? -----.

26-Ages of children at death-----.

27-Causes of death-----.

28-Did you breast-feed your youngest child? 1-Yes 2-No

If (Yes), answer question 29+30+31, if (No) skip to question 32

29-How many months did you breast-feed? -----

30-Status of breast-feeding (concerned child):

1-Exclusive

2-Nearly exclusive

3-Supplemented with food or liquid.

31-Age of the concerned child at time of supplementation

32-Status of delivery of the concerned child:

1-Normal

2-Caesarian.

3-Others

33-Did the child has birth trauma during delivery? 1-Yes 2-No.

34-Did your child experience cyanosis at birth? 1-Yes 2-No.

35-Did your child experience jaundice at birth? 1-Yes 2-No.

36-Maturity status of the concerned child:

1-Full term

2- Preterm

3- Postmature.

37-Place of delivery of the concerned child.

1-Government. Hospital

4-Home

2-UNRWA

5-Private clinic

3-Private Hospital

Now, I am going to ask about presence of some common diseases:

38-Did you experience any of the following diseases during your pregnancy of the concerned child?

1-Diabetes mellitus

4-Others

2-Hypertension

5-No associated diseases

3-Heart diseases

39-Had you suffer from one or more of the following communicable diseases during pregnancy?

1-German measles

3-Others

2-Toxoplasmosis

4-No associated diseases

40-Did you receive drugs during pregnancy? 1-Yes 2-No

If (Yes), answer question 41 if (No), skip to question 42

41-Which drugs did you receive? -----.

42-Had you been exposed to x-ray during pregnancy?

1-Yes once

3-No

2-Yes more than once

If (Yes), answer question 43 if (No), skip to question 44

43- At what gestational age.-----

44-Is your husband relative to you?

1-Yes

2-No.

45-Have your children suffer from complication of blood incompatibility?

1-Yes

2-No

46-Any of family members suffers from familial diseases?

1-Yes

2-No.

If (Yes), answer question number 47, if (No) skip to question 48.

47-What familial diseases? -----

48-Do you know how much your hemoglobin was, before delivery of your concerned child? -----gm.

49- Are you currently smoker?

1-Yes

2-No

50-did you smoke while you were pregnant of the concerned child?

1-Yes

2-No

51-Is your husband smoker?

1-Yes.

2-No.

Child Health Assessment

*Date of birth----/----/----. (Day/month/year).

*Child file No. -----

52-Sex of the concerned child

1-Male

2-Female

53-Age of the child: -----Months

54-Weight at birth -----Kg.

55-Age of sitting ----- months.

56-Age of walking -----months.

57-Vaccination status:

1-Completed regular. 4-Others-----

2-Completed irregular.

3-Incomplete.

58-Hemoglobin which documented in the child health record: -----

59-Child Health status; any abnormality documented. -----

60-Did your child become ill, which require care from health personnel?

1-Yes 2-No.

If (Yes), answer question number 61+62, if (No) skip to question 63.

61-How many times last year did the child need medical care? -----

62-What were the most common conditions that need medical care?-----

63-Did your child become ill, which worth hospitalization 1-Yes 2-No.

If(Yes), answer question number 64+65, if (NO) skip to question 66.

64-How many admissions. -----

65-The cause of admission. -----

66-Did you curse the day the child was born? 1-Yes 2-No.

67-Did you beat the child? 1-Yes 2-No.

68-Did you leave the child bare-foot in the street? 1-Yes 2-No.

69-During the last year did the child expose to:

a-Injured by falling down? 1-Yes 2-No.

b- Drinking kerosene 1-Yes 2-No

c-Ingestion of poisonous substance 1-Yes 2-No

d-Had been burnt 1-Yes 2-No.

e-Had been hit by a car 1-Yes 2-No.

70-Let me ask you about your older children. Do you allow child to drop out of school and seek a job? 1-Yes 2-No.

Physical examination of the child:

71-Weight-----kg.

72-Height-----cm.

73-Nutritional status: 1-rickets 3-Other-----
2-Marasmus 4-No associated nutritional diseases.

74-Circulatory system. -----.

75-Respiratory system. -----.

76-Digestive system. -----.

77-Nervous system. -----.

78-Orthopedic -----.

79Congenital anomalies. -----.

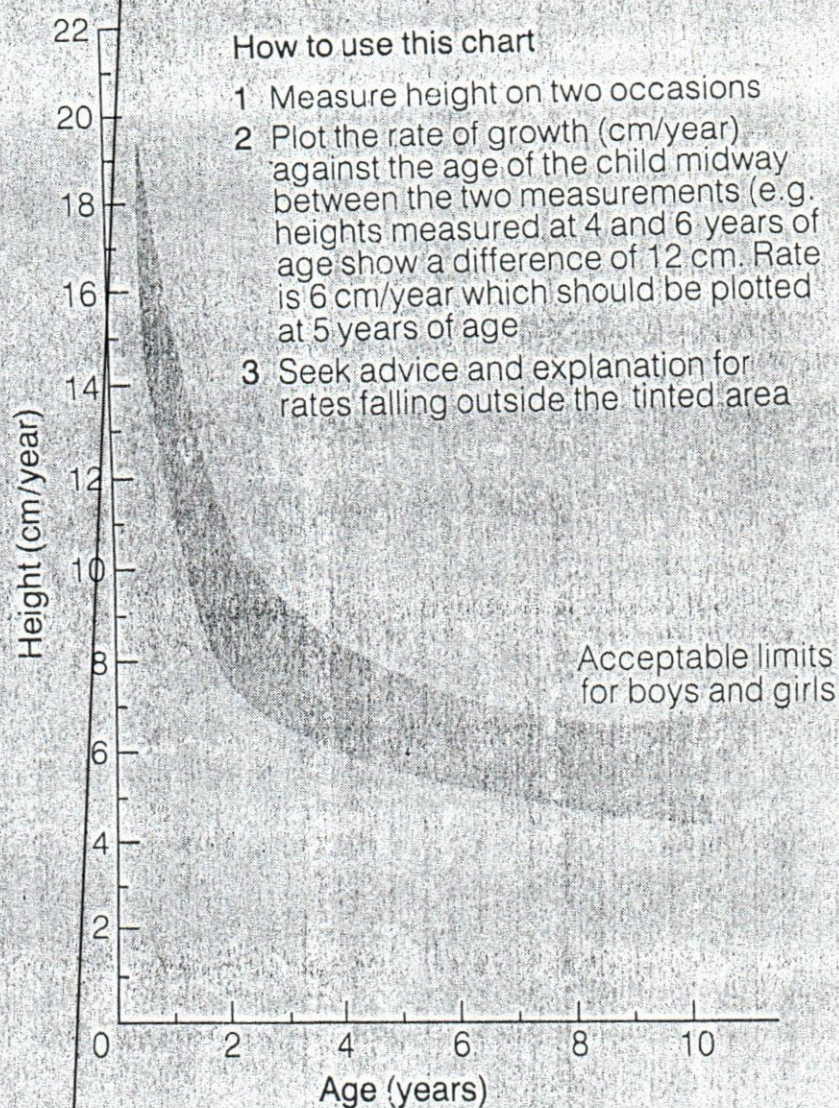
80-Endocrine disorders. -----.

81-Hematological disorders-----.

82-Skin diseases-----.

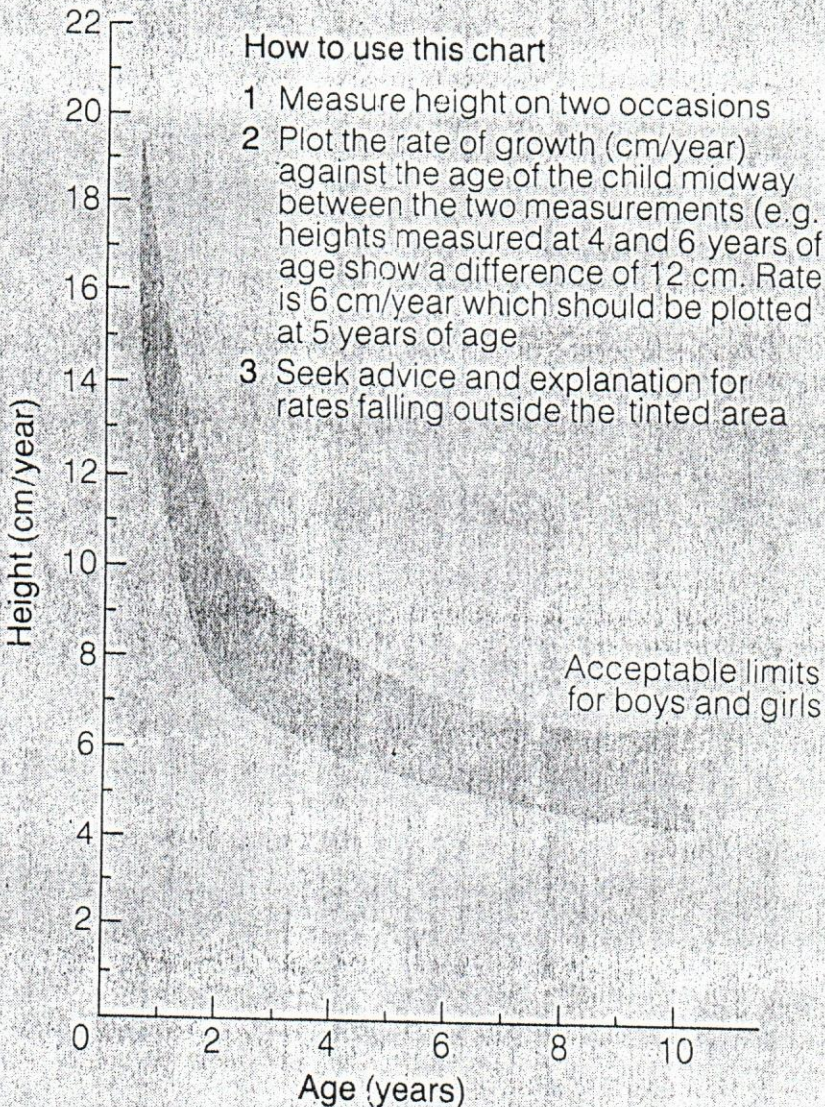
83-Others-----.

Middlesex Height Velocity Assessment Chart 1-10 years



3 The Middlesex Height Velocity Assessment Chart is a useful
showing acceptable limits for growth rate in

Middlesex Height Velocity Assessment Chart 1-10 years



3 The Middlesex Height Velocity Assessment Chart is a useful aid in primary care showing acceptable limits for growth rate in boys and girls.

Chart devised by Charles Brook, and
Child 1980; 58: 140