Breast versus Bottle

A History of Infant Feeding in Malta

C. Savona-Ventura

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This book investigates the popular customs, superstitions and the medical practices relating to infant feeding from the prehistoric and ancient period through those attitudes prevalent in the pre-industrial society to those prevalent in modern society in Malta.

Its immediate subject matter is the history of childhood in Malta, but embraces also social history and women's studies. It should be of interest not only to all medical and paramedical professionals, but also to social anthropologists and sociologists.

Cover illustration

Cover: "The Madonna and suckling Child"

Flemish school painting - now in the holdings of the Cathedral Museum, Mdina.

Associazione per lo studio della Medicina Medical History

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Introduction

One of the major biological elements that characterise the Class *MAMMALIA* is the presence of mammary glands derived from a modification of sweat glands. These first appear in embryonic life as clumps of cells proliferating from a longitudinal ridge of ectoderm (the outermost of the three germ layers of the embryo) along the so-called milk line, from the buds, or beginnings, of the lower limbs to those of the upper limbs. The number of these clumps that ultimately become breasts, or mammae, varies with each mammalian species according to the size of its litter. The mammae in the female of the species serve to produce nourishment for infant mammals.

The embryological milk-line

Accessory breast thigh

In the primitive monotreme mammals (*e.g.* the platypus), milk is expressed directly from the ducts onto the fur, from which the young lap it up. Unique in monotremes, the mammae lack nipples and are functional in both sexes. In marsupial mammals (*e.g.* the kangaroo), the mammae are located on the ventral surface of the body and in some species are protected by a skin fold or by a pouch-like structure. The tiny newborn sucks the nipple, which then expands in its mouth and thus attaches the young to the female's body. It remains attached until it is fairly well developed, after which time it nurses at will, as do the more advanced mammals. In cattle, horses, and whales, the mammary glands are located in the inguinal (groin) region; in primates, they are on the chest.

Milk production is stimulated by the hormonal changes that occur at conception and further initiated by the hormonal processes initiated through the actual process of suckling by the infant. Suckling is the method by which newborn mammals are nourished; it may last only 10-12 days, as in some rodents, or up to two years, as in the walrus. Milk composition generally alters during the growth period,

relative to the changing nutritional needs of the developing young. The milk released from the breast when lactation starts differs in composition from the mature milk produced when lactation is well established. The early milk, or colostrum, is rich in essential amino acids, the protein building blocks essential for growth. After childbirth the composition of milk gradually changes; within four or five days the colostrum has become transitional milk; mature milk is secreted some 14 days after delivery. There is no typical age at which human infants are weaned, for this varies from country to country and among the social classes of a nation. Most commonly, weaning is a gradual process, with a gradual increase in the proportion of solid food supplied to the infant together with breast milk. Paediatricians in general have concluded that, on the basis of present knowledge, no nutritional superiority or psychological benefits result from the introduction of solid foods into the infant diet earlier than the age of three months, and that normal full-term infants can be expected to thrive for the first six months of life on a diet consisting exclusively of milk, either normal human milk or properly modified milk from other sources.

Suckling mother
5th cent BC Vase, Greece

2

Prehistoric and Ancient Man

It would be expected that women in primitive societies would have a long period of suckling extending to after the initiation of weaning. This gave the women the advantage of reduced fertility brought on by the hormonal changes that occur during lactation, thus prolonging the inter-pregnancy period. It is very likely that prehistoric women in Malta suckled their young for long periods. It was only in abnormal circumstances - such as after a maternal death - that alternative forms of feeding would have been considered. In the event of a maternal death, one immediate option for feeding the newborn would have been the use of an alternative mother - a wet-nurse - who was herself lactating a child. Wet-nurses feature in the Homeric poems written in the 8th century BC recalling the Mycenean period of the late 2nd millennium BC. In the Homeric poems, the infants of the Achean and Trojan nobility were breast fed, usually by the mother.

Thus in the *Iliad*, Hecuba suckled her son Hector, while the mother of Achilles 'nurtured him in wrath'. In the *Odyssey*, Penelope is referred to as a young bride with 'an infant at her breast'. Odysseus, in contrast, appears to have been wet-nursed and asks his aged nurse Eurycleia 'Why do you wish to destroy me You did nourish me at your breast'[1]. While no evidence exists that such practices were prevalent in the prehistoric Maltese communities, pottery artefacts excavated from Bronze Age sites in Malta do show affinities to Mycenean ware suggesting a cultural link with these Aegean lands. The Maltese Islands also feature in the *Odyssey*. The Islands have been linked with Calypso's Island of Ogygia where Odysseus was marooned for several years.

An alternative option would be the use of artificial feeding using replacement goats' or cows' milk. This option would have necessitated a feeding utensil suitable for supplying the milk to the infant. The archaeological record of prehistoric man in Malta has yielded only one artefact that

[1] Homer: *The Odyssey*. Penguin Books, England, 1946, translated by E.V. Rieu. Homer: *The Iliad*. Penguin Books, England, 1946, translated

may have served as an infant's feeding bowl dating to the Saflieni phase circa 3300-3000 BC[2]. Excavated from the Hal Saflieni Hypogeum in Malta, the artefact has been described as a miniature [height 4.5 cm; maximum diameter 3.5 cm] spouted jug made of brown clay with a black core. This jug had a single handle and low horizontal spout protruding from the body opposite the handle.

Spouted jug [S/P.27]
Hal Saflieni Hypogeum

by E.V. Rieu.

[2] J.D. Evans: *The Prehistoric Antiquities of the Maltese Islands. A Survey*. University of London, London, 1971, p.62; pl.35:17

Other standard shaped bowls, cups or ladles could also have served similar functions; as could also the horns of sheep, goats and calves.

Direct suckling of children by animals may have also been prevalent. This practice was certainly manifest in Greek mythology. Zeus was said to have been suckled by the goat Amalthea; while the abandoned son of Herakles was reared by a deer and given the name of Telephus meaning 'suckled by a hind'[3]. The suckling of children by animals in mythology received greater importance in Roman mythology linked with the founding of Rome in the 8th century BC by Romulus and Remus, the foster-children of a she-wolf[4]. An alabaster statue of the she-wolf suckling Romulus and Remus was discovered near Ghajn il-Kbir in Gozo and is preserved in the Gozo Museum of Archaeology[5].

[3] F. Guirand: Greek Mythology: *New Larousse Encyclopedia of Mythology*. Hamlyn Publishing Group, England, 1959, p.85-198

[4] F. Guirand; A-V Pierre: Roman Mythology: *New Larousse Encyclopedia of Mythology*. Hamlyn Publishing Group, England, 1959, p.199-221

[5] G.P.F. Agius de Soldanis: *Il Gozo. Antico-moderno e Sacro-profano, Isola Mediterranea adiacente a Malta Africana*. Gozo: Manuscript National Library, 1746 [english translation by A. Merceica: *Gozo.*

Alabaster statue of she-wolf suckling Romulus and Remus from Gozo *[after drawing by De Soldamis]*

Towards the end of the Bronze Age Period around the 8th-7th century BC, the Maltese inhabitants apparently came into regular contact with the Mediterranean seafaring nation hailing from the eastern shores of the Mediterranean. This contact with an eastern Semitic people allowed for the introduction of an Egyptian-Punic culture that was to persist well into the Classical Age even after the Maltese islands fell under the dominion of the Roman Empire in the 2nd century BC. The Greeks have credited the Phoenicians with the invention of the alphabet system of writing common to the Northwest Semitic languages, of which

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Ancient and Modern, Religious and Profane. Malta: Media Centre Publ., 1999, p.21

Phoenician and Hebrew were variants. However any Phoenician literature that had certainly existed has all disappeared except for stereotyped inscriptions. However the cultural interplay between the various Semitic peoples including the Egyptians, the Sumerians and Hebrews would have ensured common regional medical and nursing practices. It is recorded that one of the books of the Egyptian medical papyrus, the *Ebers* - written between 1550-1547 BC - was the work of an oculist from Byblos in Phoenicia[6].

The *Ebers* papyrus demonstrates the high value put on human milk - particularly milk from a woman who had borne a male child. Breast milk was included in many oral and local remedies for a variety of conditions. These included retention of urine in a child, expelling noxious excrements in the belly of a man, cataract, burns, erysipelas and eczema. Spells, potions, and incantations were also recommending in both the *Ebers* and the contemporary *Lesser Berlin* papyri as means to promote lactation. Thus

[6] J.H. Bass: *Outlines of the History of Medicine and the medical profession*. Huntington: R.E. Krieger Publ., 1971, p.29-30

the papyri recommended that "to get a good supply of milk in a woman's breast for suckling a child: warm the bones of a *Xra*-fish in oil and rub her back with it" and "to recognise milk which is bad: thou shalt percieve that its smell is like *snj* of fish; to recognise milk that is good: its smell is like powder of manna". The "remedy for a breast that is ill: calamine, gall of ox, fly's dirt, yellow ochre are mixed together, and the breast is rubbed therewith for four days"[7].

The Semitic races further believed that the daily hazards of existence were caused by a multitude of malevolent spirits who permeated the universe and intervened in natural processes. These spirits were thus responsible for the onset of disease. Protection was thus afforded against ill-health by veneration to individual deities and/or incantation of spells. The Babylonian goddess of fertility Ishtar or Ashtart [Astarte] was believed to protect the child before, during and after death. A sanctuary dedicated to Astarte has been excavated at Tas-Silg in Marsaxlokk (Malta). The Tas-Silg Sanctuary was subsequently dedicated to Grecian deity

[7] B. Ebell (translator): *The Papyrus Ebers. The greatest Egyptian medical document*. Copenhagen. V. Fildes: *Breast, bottles and babies.*

Hera by Ptolemy and the Roman deity Juno by Cicero[8]. The Grecian Hera presided over all phases of feminine existence and was considered the goddess of marriage and maternity. Similarly the Roman deity Juno was considered as the goddess and symbol of the Roman matron, and in this respect the deity occupied an important part in the ceremonies of marriage and afterwards. Juno had many titles - Juno Lucina protected the pregnant wife and was invoked by barren women, Juno Ossipago strengthened the bones of the infant, Juno Rumina assured the mother's supply of milk, while Juno Sospita received fervent invocations at the time of labour and delivered the baby[9].

Ashtart sucking
Babylon:6th century BC

Toueris
Xewkija, Gozo:5th-4th century BC

A history of infant feeding. Edinburgh: University Press, 1986, p.5

[8] T.C. Gouder: Phoenician Malta. *Heritage. An Encyclopædia of Maltese Culture and Civilization*, 1978, 1:173-186

[9] F. Guirand, A.V. Pierre, 1981: *op. cit.* , p.203-204

Toueris was another popular protective Egyptian goddess of childbirth, and symbolised maternity and suckling. She herself had given birth to the world. Toueris was represented as a female hippopotamus with pendant mammae standing upright on her back legs and holding the hieroglyphic sign of protection in one paw and the sign of life in the other[10].

The presence of cults in Malta related to maternity and suckling suggests that breastfeeding was probably the first choice for neonatal feeding with artificial feeding being resorted to when the mother was unable to feed her child. Wet-nurses may have been employed; but the archaeological record of the Classical Period in Malta has yielded a variety of infant feeding utensils. Items from a tomb of the early Roman period circa 150 BC include late Punic type feeding bottles where a piece of cloth wrapped round the small nozzle jutting out of the shoulder served as

[10] J. Viaud: Egyptian Mythology. *New Larousse Encyclopedia of Mythology*. Hamlyn Publ, London, 1981, p.9-48; H.E. Sigerist: *A History of Medicine. Vol. I: Primitive and Archiac Medicine.* Oxford

a teat. This pottery item may have served to feed infants and invalids. A specimen of this feeding bottle has been found accompanying a child's skeleton aged about five years.

The Classical collection held at the St. Agatha Catacombs Museum includes two jug-type feeding bottles: a globular small jug containing a very small nozzle which could only have served for young infant feeding, and a standard jug with a moderately sized nozzle useful for older infants. The same collection has a series of jug nozzles, one of which is nipple-like with a number of small holes to control milk flow. These jug-type feeding bottles are similar to those found in Roman excavations in England dated to the 1st-2nd century AD. These are jug-shaped with a sprout for sucking on one side. Boat-shaped types of infant's feeding bottles are also included in the collection at St. Agatha Catacombs Museum and another specimen can be seen at the Rabat

University Press, New York, 1951, p.241-242; C. Savona-Ventura: *Outlines of Maltese Medical History*. Malta, Midsea Publ., 1997, p.8-9

Museum of Roman Antiquities[11]. The latter is similar to Roman feeding bottles from Europe dated to the 1st-2nd century AD. It has a sucking sprout at one end and a second larger hole for filling at the other end. A beautiful drinking vessel with a sprout in the shape of a horned snail can also be seen in the Rabat Museum of Roman Antiquities. This could have also served as an infant's feeding bottle but more likely served as an adult's drinking utensil[12]. Infant feeding bottles were occasionally made of glass as evidenced by the specimens on display in the Budapest History Museum (Buda Castle, Hungary).

The first medical works to pay significant attention to paediatrics came from Rome in the 1st-2nd centuries AD, the most significant surviving medical text being that of the Greek physician Soranus of Ephesus (98-117 AD). The other important medical writer of the period was Galen (130-216 AD). Galen's views on the subject of infant feeding are often similar to those held by Soranus. The first

[11] Acknowledgements are due to Rev. Fr. V. Camilleri - Curator of the St. Agatha Catacombs and Museum for making available for study the collection of infant feeding jugs held in the museum.

food recommended to be given a newborn child was boiled honey, or honey and goats' milk. Soranus preferred to give nothing for two days at all unless the baby appeared hungry.

Infant feeding bottles
St. Agatha Museum, Malta

Honey was considered to have a purging effect and helped expel the first stools meconium from the intestines. After

[12] V. Fildes: *Breast, bottles and babies. A history of infant feeding*.

this the child was to be fed by a wet-nurse. The first milk or colostrum was considered to be unsuitable for the neonate since it was too thick, and if a wet-nurse could not be provided the mother could breast feed her child provided the "first milk" had been previously expelled. The mother's milk could otherwise be used after 20 days. Roman philosophers and moralists of the 2nd century AD, such as Pliny, Plutarch, Aulus Gellus and Tacticus, were against the employment of wet-nurses and wrote strongly in favour of breastfeeding. Mother's milk, they wrote, was the most suitable and healthiest food for the neonate. They based their views on physiological and psychological arguments. The mother was to be excused breastfeeding only if she were ill or if she wanted more children. Suckling women were banned sexual intercourse. The Romans adhered to the view that the characteristics of the wet-nurse were imbibed by the child through her milk. The milk was to be tested for consistency. Once chosen, the wet-nurse and nursing mother had to follow strict regimen of diet, rest and exercise to maintain a good milk supply. Various adjustments and medicines were available for women who

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Edinburgh: University Press, 1986, pl.1.12;13.app.8-13;13.app.24

had insufficient milk. These included cabbages, colewort, fennel, seeds of *Agnus castus* tree, anemone, and the boiled stalk of sow thistle. Soranus strongly recommended that infants should be fed only breast milk until about six months of age, and the child was to be weaned completely from the breast at the age of three. Although no specific mention is made of artificial feeding, suitable vessels were available in the event of a child needing temporary or more permanent dry nursing. Infant feeders were probably widely used during weaning. In a few instances, infants may have been bottle-fed from birth[13].

[13] Soranus: *Gynaecology*, 1st-2nd cent AD [english translaton: O. Temkin: *Soranus Gynaecology*, Baltimore, 1956]; V. Fildes, 1986: *op. cit.*, p.26-36

3

Medieval and Early Modern Periods

The Medieval Period heralded the division of the Roman Empire with the Maltese Islands finding themselves under the jurisdiction of the Byzantine Empire around AD 535. The centuries of Byzantine influence or domination over Malta are completely shrouded in mystery, and it is hard to see any turning point in Roman Malta until the Muslim conquest in 870 AD. This period was to see the emergence of two monotheistic religions originating from the Jewish religion. These new cultures were to replace the previous multiple deities and dominate the Mediterranean basin. Both Christianity and Islam adopted philosophies that directly or indirectly affected medical and daily life practices. The intercultural interplay between these two religions and the Jewish community continued to influence Maltese society until the expulsion of the Muslim community in c.1249 and the Jewish community in 1493.

The paediatric corpus of these three cultures was based on the previous Romano-Hellenistic medical system derived

mainly from Soranus and the Galenic tradition, via Oribasius and Paul of Aegina. The works of Galen (c.131-200 AD), Rhazes (860-932 AD), Avicenna (980-1037 AD) and Avenzoar (1072-1162 AD) remained the principal corpus of reference for Maltese practitioners well into the 16th century[14].

In his *De sanitale tuenda*, Galen discusses the management of infants and children. His views on this subject were often similar to those held by Soranus, but did hold different opinions in certain practices. For example Galen does not seem to have shared the view that the mother's milk was unsuitable for twenty days after birth. He recommended that in the event that another lactating woman was unavailable to feed the child, the infant should for the first three days be fed on honey alone or mixed with a little goats' milk, while the "first milk" of the mother was sucked out by a stripling or expressed by hand. This milk was considered to be too thick and unsuitable for the neonate. After the third day, he considered that the mother should

[14] P. Cassar: A Medico-legal report of the sixteenth century from Malta. *Medical History*, 1974, 18:p.354-359

suckle her infant and breastfeeding was to continue until the infant was three years of age. Other foods, such as bread, vegetables, meat and milk, were to be introduced in the infant's diet when the first teeth erupted. Wine in any form was forbidden until adulthood. It was considered that the nursing mother or wet-nurse could pass on ill-health to the child. The nursing woman was to take care in her food and drink, should abstain from sexual intercourse since this could stimulate menstruation affecting milk quality, and should stop suckling should she get pregnant since the milk of a pregnant woman was considered to harm the child. The ideal milk was considered to be coloured white, taste and smell sweetly, and should have a moderately thick consistency[15].

Galen

Avicenna

[15] V. Fildes, 1986: *op. cit.*, p.26-27, 60-65

In his *Canon of Medicine*, the Persian Islamic writer Avicenna devoted a significant amount of space to infant feeding and associated problems, including a section on neonatal feeding; the qualifications of a good wet-nurse and her milk, advice on improving the quality and quantity of the milk, and a regime for the wet-nurse or nursing mother. He introduced the idea that infants should be breast fed only two or three times a day, particularly in the first few days of infancy. He also described how and when to wean the child. Other foods - such as pre-chewed bread, bread soaked in wine, honey or milk, and bread and sugar cones - were to be introduced when the infant begins to ask for them. Wine was permitted to occasional few drops only. Weaning was to occur at two years of age and this should be done slowly and gradually, anointing the breast when the child cries for it.

Avicenna advised that the infant should not be suckled by a mentally-deranged wet-nurse because such a woman would adversely affect the child's health and character. The wet-nurse should have a cheerful temperament, non-emotional, and be of good moral character. She should be aged 25-35,

harbour no disease and have good health and vigour. Her physique should include a broad chest, have a well-developed muscular body and a strong neck. Her breasts should be moderately large and firm, and not soft, flabby or pendulous. Her own offspring at the time of employment should be full-term, preferably male and aged 1-2 months. She should maintain a wholesome diet with moderate amounts of animal food and wine avoiding salty foods. Regular moderate exercise was recommended; while the lactating woman was to abstain from sexual intercourse and pregnancy.

If any problems were encountered with the infant, the proposed remedy was to treat the nurse or alternately employ an alternative. Should the milk be too thick or have an unpleasant smell, the milk should be drawn and exposed to the air for some time before feeding it to the baby. To test breast-milk quality, Avicenna advised "adding a little myrrh to a small cup of milk and stirring with a finger. If the milk separates into equal quantities of cheese and water it is to be regarded as of good quality." The ideal milk was of an absolutely white colour, having a slightly sweet taste

and pleasant smell. It should have a moderate consistency being neither too thick nor too thin[16].

Breastfeeding remained the norm throughout the Medieval Period even though there is evidence from non-medical sources that from the early 2nd millennium in most western Europe many wealthy and noble families employed wet nurses to feed their children. Nursing by animals was generally denounced. Artificial feeding using a suckling-horn was resorted to in cases of need.

Feeding an infant through a suckling-horn
France, 13th century

[16] V. Fildes, 1986: *op. cit.*, p.40-41, 60-65

In Malta, specific mention of wet-nurses or *mammane* dates to the early decades of the 16th century. The accounts records for *Ospizio Santo Spirito* of 1518 records the employment of two wet-nurses, namely the wife of Mastro Bartholomeo Chilia and the wife of Matheo Use who "*per nutritari la pichotta*" were paid respectively 4 *tari* 10 *grani* and 5 *tari* per month; the former's fees being further reduced to 3 *tari* towards the cessation of breastfeeding. In June 1520, three infants who were "*gettati*" at the hospital were farmed out to the wife of Blasi Chilie, the wife of Hamirun, and to the wife of Luca Virzic, each receiving a standard fee of 4 *tari* 10 *grani* per month. The practice of employing wet-nurses for foundlings left at *Santo Spirito* was maintained and by 1540, no less than nine foundlings were being cared for by six wet-nurses at a cost of 29 *tari* monthly. One wet-nurse, the wife of Gregorio Saijd was suckling three foundlings at one time. In 1547, 19 mammane "*che nutrirano li figluoli gettatini*" were employed at a cost of 3 *uncie* 2 *tari* 15 *grani* per month. In 1554, 15 foundlings were being cared for at a cost of 2 *uncie* 8 *tari* per month by the *mammane* Czairi Coruel and the wives of Jorgi Jngomes, Petro Calabrisi, Iohanni

Thomasij, Iohanni Camilleri, Masi Chutaye, Blasi Czingil, Bartholomeo Liftec, Deunisi Cauchi, Zacharia Gintil, Damiano Xerri, Mastro Jacobo Butigeg, and Augustino Staferrata. By 1562 not enough wet-nurses could be found to care for all the foundlings, and the *Universita`* petitioned the Grandmaster for more funds to enable it to raise the monthly stipend to 6 *tari*. The infant mortality of these children was very high approximating 25%. At the age of five years, these foundlings were integrated into society through fostering or adoption sometimes by the nurturing wet-nurse herself, as happened in the case of the unmarried wet-nurse Czairi who became so attached to the child she was suckling that she adopted it as her own[17].

The same hospital continued offering this child welfare service well into the early modern period. By 1615, the hospital had introduced a system of infant deposition though a contrivance, termed the *ruota,* set up in a small window of the hospital. This consisted of a wooden cot or cradle that revolved on a vertical axis with the view of

[17] S. Fiorini: *Santo Spirito Hospital at Rabat, Malta. The early years to 1575.* Department of Information, Malta, 1989, p.35-38, Appendix:

anonymously depositing the infant into the hospital premises[18]. This contrivance and the care afforded to the foundlings were described by the philanthropist John Howard in 1786. "At the back of the hall, over the Knights' Arms, a cross is a marble crown, and under it, on white marble, is the inscription "*Infantium incolumitati*". There is a wooden cradle, turning on an axis, and a pin strikes a bell, to give notice of the reception of infants into the Foundling Hospital. These infants after being received are sent to the Governess of that Hospital, who provides nurses for them in the country; and on the first Sunday of every month, these nurses bring back the children, to show them, and at the same time to receive their pay, the Governess very properly being present. On one of these occasions I had the pleasure of seeing a number of fine, healthy children. In the Foundling Hospital there were 39 girls, between 7 and 12 years of age"[19].

Doc.XI, p.98-99, Doc.XIX, p.109-110

[18] P. Cassar: *Medical History of Malta*. Wellcome Historical Library, London, 1965, p.27

[19] J. Howard: *An account of the principal Lazarettos in Europe*. London, 1789, p.58-60

Similar child welfare arrangements were made at the Hospitaller *Sacra Infermeria* at Birgu in the mid-sixteenth century, with two women being employed to bring up these children. These services were eventually transferred to the Valletta *Sacra Infermeria*. These children were kept in a room next to the kitchen in the basement of the hospital adjoining the Great Magazine. The foundlings were kept here until they were farmed out to foster-mothers. Two women, known as *ospitaliere*, who resided in the hospital, originally cared for the foundlings and ensured that they were well looked after and properly nourished. By 1642, these two women were no longer quartered in the hospital. Towards the end of eighteenth century just over 200 infants were being received annually by the hospital. These were cared for in the *Casa delle Alunne* attached to the *Casetta* until they reached the age of eight years[20]. Foundling care facilities including the *ruota* were also offered in St. Julian's Hospital for females in Gozo set up in 1787 and managed by the Church authorities[21]. During the period May 1778 to April 1785, expenses to cover the care of

[20] P. Cassar, 1965: *op. cit*., p.42,48-49,352-353

Bambini Esposti amounted to 40139 *scudi*, an annual average of about 5734 *scudi* [22].

Children were breast-fed for a long period of time, this protecting the mothers from an early subsequent pregnancy. Those who did not breastfeed did so only because they had inappropriate quantities of milk. When sufficient wet-nurses for the foundlings in the hospitals were unavailable, the infants were fed on goat's milk. The richer families also employed wet-nurses in time of need, though the 18th century French practice of regularly employing wet-nurses to feed newborn infants may have also been introduced in Maltese high society. This is reflected in a painting by A. Favray that depicts a scene where a parturient high society mother is receiving visits from friends. The scene includes a wet-nurse suckling the child. In 1786 Vincenza Sacchett took into her service Maria Hellul as a wet-nurse for the

[21] J. Bezzina: *The Sacred Heart Seminary. The heart of Gozo*. Bugelli Publ., Malta, 1991, p.13

[22] J.M. Wismayer: *The Seven year balance sheet of the Sovereign Military and Hospitaller Order of St. John of Jerusalem of Rhodes and of Malta from 1st May 1778 to end of April 1785 by the Chevalier Bosredon de Ransijat Secretary to the Venerable Common Treasury with an Introduction and Glossary*. Universal Intelligence Data Bank of America, Malta, 1984.

period of eight months. Pio Vidal on being abandoned by his wife sent his 8-month old son to a wet-nurse for 3 *scudi* a month suggesting that the practice of weaning the child off the breast occurred at a much later date[23].

Visiting a newly-parturient lady with wet-nurse feeding the infant **[**A. Favray, 18th century, in private coll.**]**

[23] CEM: *AO696*, f.286r-367r; A. Anderson: *A Journal of the forces*. London, 1802, p.181; AIM: *Processi 137*, f.70r-97v; CEM: *AO693*, f.408r-417v; F. Ciappara: *Marriage in Malta in the Late Eighteenth Century*. Associated News (M), Malta, 1988, p.71,109; P. Cassar, 1965: *op. cit.*, p.352.

4

Contemporary Period

Breastfeeding by the mother remained the apparent norm throughout the early nineteenth century, suckling persisting well after the eruption of the infant's dentition. In 1811, an anonymous foreign resident published a pamphlet to advise about infant upbringing. He emphasised the superiority of breastfeeding over other kinds of food. He further condemned the custom of suspending the infant in air by placing a thumb under the palate in the false belief that this promoted suckling[24]. In 1821, it was noted that "in general there is no difference between the food of the infant and the adult, except in quantity; the child scarcely dismissed from the breast swallowing oil, cheese, salt fish, vegetables, &c with all the gusto of their parents". "In some cases, weakly or diseased children are taught to draw their nourishment from the goats". In situations where the infant's mother was unavailable or could not suckle her infant, then the assistance of wet-nurses was sought. Infants deposited in

[24] *Osservazioni sul modo di allevare I bambini in Malta fatte di uno straniero*. Malta, 1811.

the government foundling institution were "sent out to nurse in the country as fast as nurses can be provided for them. Those who are not thus provided for are reared by hand in the house; some are very pitiable objects, their congenite diseases rendering it impossible to procure wet nurses for them; great attention, however, is paid to them, and some are reared by means of goat's milk, which they suck from the animal, but the mortality is very high"[25]. The goats were described as leaving “their pasture when they think the child requires to suck, bleat at the door until admitted, scamper to the nursery where the little urchin is placed on a pillow on the floor, the goat lies down beside it, a tit is placed in its mouth, and when it suck its fill or when Nanny is of opinion it has had enough, she rises, goes through her gambols then bounds off to feed”[26].

[25] J. Hennin: *Sketches of the Medical topography of the Mediterranean comprising an account of Gibraltar, the Ionian Islands, and Malta*. Thomas & George Underwood, London, 1830, p.482; R. Montogomery Martin: *History of the British possessions in the Mediterranean comprising Gibraltar, Malta, Gozo, and the Ionian Islands*. Whittaker & Co., London, 1837, vol.3:p.234-235; p.248-249

[26] T. MacGill: *A Handbook or Guide for Strangers visiting Malta*. Malta, 1839, p.14

The latter part of the 19th century saw a move to educate the population in health matters by the publication of medical items written in Maltese in the local newspapers and as separate publications. Many of the publications dealt with infant care. A series of articles appeared in 1843 in the *Repertorio di conoscenze utile* to combat prevailing ignorant practices and emphasise the wise principles regarding breast and artificial feeding generally with goat's milk, but also with the milk of the mare and the she-ass[27]. In 1874, the Chief Police Physician Dr. A. Ghio commented that "enteritis is the disease prevailing in the Islands particularly among children during teething and in the hot season. It is a serious disease which requires the greatest care in its management especially with respect to diet". Many of these deaths could be attributed to artificial feeding[28].

Fabrizio Borg published a series entitled *Is-Sahha tal ulied* in *Is-Sebh* (1884) that included information about infant

[27] *Repertorio di conoscenze utile*. 23rd Sptember 1843, p.127
[28] A. Ghio: *Report on the Mortality in Malta and Gozo for the year 1874*. Government Printing Office, Malta, 1867, p.18-21

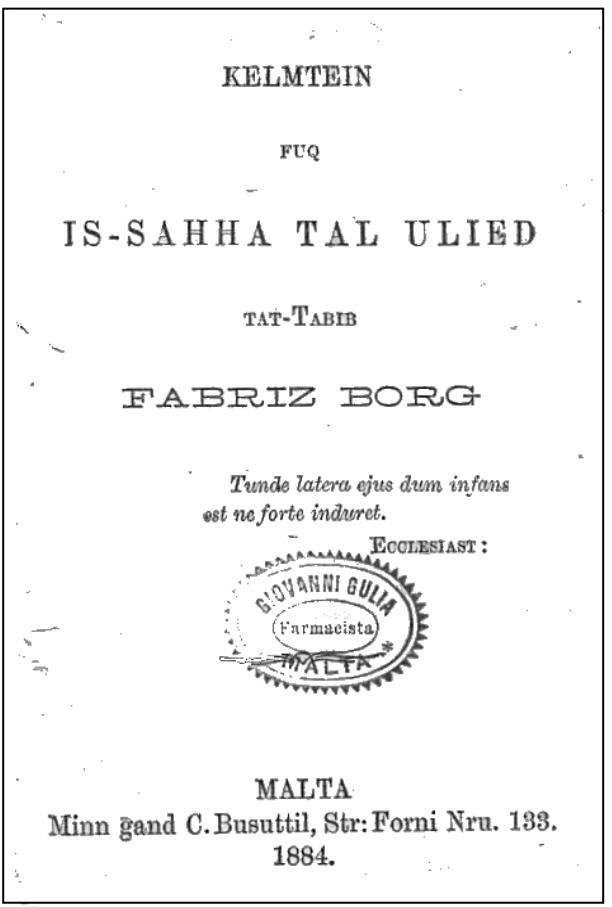
feeding[29]. Dr. Fabrizio Borg can thus be considered as the first Maltese medical journalist who undertook the initiative to educate the working-class population in health matters using the vernacular language. He republished on his own initiative the above-mentioned series as a booklet entitled *Kelmtejn fuq is-sahha tal ulied* (1884). This work was in 1911 republished in the series *Cotba tal Moghdija taz-Zmien* Issue No. 110 of the series entitled *Is-Sahha tal ulied*. This publication also included a section *Mard l Ghajnejn f'it-Trabi* written by L. Manche[30].

Fabrizio Borg advised the mothers that it was not essential to suckle their infant in the first twenty-four hours when the administration of warm sweetened water every two or three hours should suffice. However after this interim, breastfeeding by the mother was considered the ideal since

[29] F. Borg: *Kelmtejn fuq is-sahha tal ulied*. C. Busuttil, Malta, 1884, +64p. Included 13 sections: I. Il Hasil; II. Il Lbies; III. Ir-Rdig; IV. Il Ftama; V. Il Hruj; VI. Ir-Rqad; VII. Ix-Xahxiha; VIII. Is-Snien; IX. It-Tilqin tal Jidri; X. Il Logob u ix-Xogol; XI. Is-Swat u il Biza'; XII. It-Taglim; XIII. It-Tfal fil Mard.

[30] F. Borg: *Is-Sahha tal ulied*. Moghdija taz-Zmien No.110; Malta, 1911, p.1-36; L. Manche: *Mard l Ghajnejn f'it-Trabi*. Moghdija taz-Zmien No. 110, Malta, 1911, p.37-40

alternatives could predispose to ill-health and early death of the child.



KELMTEIN

FUQ

IS-SAHHA TAL ULIED

TAT-TABIB

FABRIZ BORG

Tunde latera ejus dum infans est ne forte induret.

ECCLESIAST:

GIOVANNI GULIA
Farmacista
MALTA

MALTA
Minn gand C. Busuttil, Str: Forni Nru. 133.
1884.

Early initiation of breastfeeding was proposed to accustom the child to suckle and so that the fatty early milk would stimulate the infant's bowels. The mother was not to breast feed if her breasts were diseased, was mentally incapable, or suffered from epilepsy or any other disease that could be transmitted to the infant. Breastfeeding was to be timed - every two hours during the day and every three hours by night in the early weeks. After four or five weeks, suckling every four to five hours was considered sufficient. Feeding simply because the infant cries was to be avoided since this may aggravate any colic and cause the infant to vomit the excess. Women who could not maintain the proposed regimen of breastfeeding were advised to abstain.

Breastfeeding was to continue until the eruption of the first teeth at approximately nine months of life when weaning should be initiated. During these nine months, the lactating mother was to maintain her health through good nutrition, exercise, and a quiet temperament. Weaning should be initiated by reducing first the number of times the infant is put to the breast, first at night then during the day, while

introducing alternative food. The process was supposed to be complete by fifteen days. In some cases, the period of breastfeeding could be prolonged to one year. However prolonged breastfeeding was considered to be harmful to the infant's stomach and the mother's health predisposing to blindness, deafness and breast disease.

Those mothers who opt for artificial feeding or have insufficient breast milk were advised to use diluted goat's milk alone or as supplement. Dilution should start at 1 portion milk to 3 portions water and increased slowly until the ratios inverse. Supplementary feeds were to be given via a feeding bottle and not a feeding spoon. If the supplementation results in bowel disturbance or is vomited, then it should be withheld for a short period. The feeding bottle was to be kept scrupulously clean to prevent deterioration of the milk. At no time should the bottle be left in the infant's hands throughout the night since the milk would deteriorate predisposing the child to fever.

KTIEB IL QABLA

MIKTUB MILL

PROF. S. L. PISANI.

MALTA

1883.

Stampat minn P. Dazoso e Co., Nu. 33, quddiem San Jwann, Valletta.

Contemporary to 19th century Fabrizio Borg's publications were the published lecture notes for midwives prepared by Prof. Salvatore Luigi Pisani and Prof. Giobatta Schembri. Published in 1883, *Ktieb il Qabla* by S.L. Pisani advises about the antenatal care which should be given to the breast. Close-fitting clothes or corsets were to be avoided at all costs to prevent hindrance and allow for breast and nipple development

nipple shield

A nipple shield [*ras ta bezzula*] could be used to prevent inversion of the nipple. The recommended shield was made of thin lead or tin in the form of a hat and could be bought from the pharmacist.

In addition, hardening of the nipple using ointments prescribed by the physician was recommended when the skin was thin and susceptible to cracking during lactation.

Further preparation for eventual breastfeeding included advice about antenatal suckling by an assistant or the woman herself using a sucking device [*mammalora*]. Prof. Pisani was not in favour of this practice since he believed that this could lead to infections or miscarriages.

sucking cup

Pisani further advised that suckling should be encouraged when the milk appears. In the interim, the infant could be administered warm sweetened water, orange or barley water, or camomile infusion Suckling was described as a spontaneous instinct and the infant was simply to be put to the breast. No problems were to be anticipated provided milk was available and the infant was not tongue-tied. The recommended method of breastfeeding was a timed regimen - initially every two hours, increasing to every three hours when lactation became established. Three feeds were to be given at night. A timed regimen of feeding was consider advantageous to the mother since it resulted in a

more satisfied infant who slept for longer periods thus allowing the mother more freedom of movement[31].

Prof. Schembri in his lecture notes dated 1896-97 advises that antenatal preparation should include the avoidance of tight lacing and constant moistening of the nipples with glycerine and brandy. Nipple shields were to be used when the nipples were not well developed. After confinement, the woman was not to be allowed to nurse her baby before at least eight hours after the confinement so as to allow her to rest. Earlier breastfeeding was indicated when there appeared to be inertia of the uterus since suckling stimulated the uterus to contract. During the first hours after birth, the infant was to be given a little brown sugar dissolved in water with a spoon. This was believed to help dissolve the mucus that accumulates in the throat and also served as an aperient. The first milk or colostrum similarly served as an aperient helping to expel the meconium. If the meconium was not passed within the first twenty-four hours, then the child was to be given a small dose of

[31] S.L. Pisani: *Ktieb il Qabla*. P. Debono, Malta, 1883, p.40-41; 64-65; 97-98; S.L. Pisani: *Fuq il mard tat-tfal u kif nilqulu*. Government

glycerine or castor oil. Lactation was believed to become established around the third day and was accompanied by a slight rise in fever particularly in sickly, sensitive, excitable or hysterical women. For the first twenty days or month, the child was to be fed every two hours during the day and two or three times during the night. The intervals were increased with increasing age. Overfeeding by prolonged suckling was considered to result in possetting. Problems in breast-milk flow could result from any moral cause or any indisposition. Breastfeeding was noted to be generally associated with amenorrhoea, though in some instances the menses resumed after two or three months particularly when the milk flow was poor[32].

The recommended duration for lactation at the turn of the century was generally set as nine months. However an analysis of gravidity by age in a group of women delivery at Victoria Hospital in Gozo in the late nineteenth century

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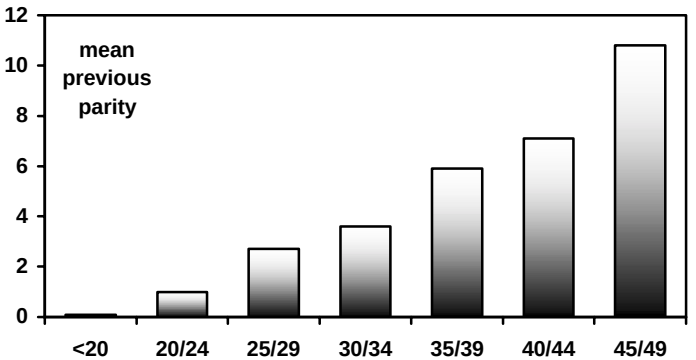
Printing Office: Malta, 1885, +23p

[32] G.B. Schembri: *Taghlim ghal l-istudenti ta' l-Iscola tal-Kwiebel ta' l-Isptar Centrali*. Government Printing Office, Malta, 1897, p.82-83, 96, 110-111; G.B. Schembri: *The Midwife's Guide Book*. Government Printing Office, Malta, 1896, p.106, 75-77

suggests that the inter-pregnancy period approximated two to three years[33].



Mean previous parity by maternal age

Gozo Hospital Maternities: late 10th century

[33] C. Savona-Ventura: A Maternity Unit in Gozo a hundred years ago. *Maltese Medical Journal*, 1995, 7(1):p.55-61

TAGHLIM

GHAL L-ISTUDENTI

TA' L-ISCOLA TAL-KWIEBEL

TA' L-ISPTAR CENTRALI

MICTUB MIL

Prof. G. B. Schembri, M.D.

MALTA
STAMPERIJA TAL-GVERN

1897.

The first decade of the twentieth century saw the publication of another information handbook for mothers written by Dr. L. Manche' and translated for the Pro Infantia Association by Advocate E.L. Vella. This was first published as No. 54 of the series *Moghdija taz-Zmien* with the title *Taghlim ghall-Ommijiet fuq it-Trobbija ta' Uliedhom* in 1906 and subsequently as a separate publication entitled *It-Trobbija Tat-Tfal jeu Tuissijet ghall ommijiet* in 1907. The booklet dealt with marital/pregnancy problems and infant/child care[34]. The *Pro Infantia* Association was founded some time before 1905 with the object of spreading practical hygienic measures to reduce the infant death rate.

The booklet published by the *Pro Infantia* has detailed instructions about infant feeding supporting strongly breastfeeding by the mother as a primary objective. Should this fail, then recourse could be made to a wet-nurse (*l-imreddgha*) in the first instance or to artificial feeding using

[34] L. Manche', E.L. Vella: *Taghlim ghall Ommijiet fuk it-Trobbija ta Uliedhom*. Moghdija taz-Zmien No.54, Malta, 1906, p.1-30; L. Manche, E.L. Vella: *It-Trobbija tat-Tfal jeu Tuissijet ghall ommijiet.* Pro Infantia, Malta, 1907, +55p.

cows' or goats' milk. Asses' milk could be considered when the child was sickly. Milk was the only nutrient needed until the eruption of teeth at six to nine months of age. Breastfeeding was considered beneficial to both mother and infant. It increased mother-child bonding, and gave psychological satisfaction to the mother. The infant benefited by gaining more weight, was more content sleeping more and crying less. Women whose milk production was deficient were advised not to persist in breastfeeding since this would result in adverse effects to the infant.

The breastfeeding mother was advised to keep to a healthy diet, eating regularly three or four times a day. She should seek to obtain sufficient rest, sleeping six hours at night and one hour during the day. Evening exertions and entertainment were to be avoided. It was considered healthy to seek fresh air, and a walk in the country was recommended. She was further advised to maintain cleanliness, particularly caring for her breasts after each feed. She was to avoid a draught during breastfeeding since this could result in breast engorgement and deterioration of

the milk. Emotional disturbances were considered harmful during breastfeeding. These were to be avoided, but if subject to these emotions, she was to avoid breastfeeding until she regained her composure preferably after manual evacuation of the milk in the breast. Breastfeeding was to be also avoided during menstruation. Like his predecessors, Manche` advised against demand-feeding whenever the infant cried. Feeding was to be timed: in the first two months, feeding was recommended every two hours during the day and four to five hourly at night. In the third month, the daily routine was to decrease to a feed every three hours.

Wet-nursing was to be considered the alternative when the mother could not breast feed. Wet-nursing was to take place under the supervision of the mother in her home, and at no time should the infant be given out to be brought up in the wet-nurse's home. The wet-nurse should be chosen preferably before the delivery to ensure that the one engaged is suitable.

CTIEB STAMPAT U MXERRED MILL CUMITAT

"PRO INFANTIA"

IT-TROBBIJA TAT-TFAL

JEU

TUISSIJET GHALL OMMIJET

migbura mit-***Tabib L. Manche'***

u migiuba bil malti mill'***Avv. E. L. Vella***

MALTA

Stamperia tad-Dar ta San Ġusepp—Hamrun

1907

The wet-nurse should be aged 20-30 years, be in good health (as confirmed by the doctor), of a good character (as confirmed by the Parish Priest), and be of a pleasant and patient disposition. The wet-nurse's child should be approximately the same age as the infant being fed.

Artificial feeding with cows' or goats' milk was to be considered only as a last resort, though Manche` laments that a number of mothers were opting for artificial feeding as a primary option. Artificial feeding was achieved either by direct suckling from the animal or through the use of a feeding bottle (*flixkun* or *biberone*). Cow's milk was considered to be denser and of a lower sugar content. It thus had to be diluted with barley water and augmented with brown sugar. The latter helped in stool evacuation. During the first days of life, the cow's milk was diluted at one portion milk to three portions barley or warm water. The infant was to be fed half a bottle every two or three hours. With increasing age, the dilution ratio was decreased gradually, until four months of age when undiluted warmed but not boiled milk could be given. Goat's milk was to be preferred to cow's milk, since it was considered less dense

and had a higher sugar content. Asses' milk was considered to be even less dense than goat's milk and was recommended whenever the infant was sickly.

It was recommended that the milk was obtained from the same goat, preferably one that belonged to the family. If direct feeding by the animal is attempted, then one had to ensure that the animal's breasts were to be well cleaned. Direct animal feeding was considered as optimal, since the infant was fed fresh milk with the right body temperature. The bottle used for feeding was to be made of glass and sterilised with hot water and sodium carbonate [*carbonato di soda*]. Two or three bottles were to be available to ensure that these are well cleaned and sterilised before use. They were to be stored in clean water. The ideal bottle was the boat-shaped infant bottle that had a wide teat with a large hole. This facilitated feeding and was easier to clean. Bottles incorporating rubber tubing were condemned[35].

Boat-shaped or Banana bottles was often referred to as the hygienic bottle. They first made their appearance at the

[35] L. Manche, E.L. Vella, 1907: *op. cit.*, p.17-24

close of the 19th century around the mid-1880's. The first true banana feeder with a teat and valve was invented by Aleen & Hanbury in 1894. In the next fifteen years, the model was modified over a series of four slightly different models. In 1910, the final design "The Allenbury Feeder" was to remain unchanged for the next 50 years. In Malta, the banana feeder continued to be used well into the 1950's, but was gradually replaced by Upright Feeder bottles. Contemporary infant bottles were the Banjo-shaped feeders of the late 1900's. The bottles were designed with an integral glass tube and a stopper. Attached to the glass tube there was a length of Indian rubber tubing, which ended with a bone mouth shield and a rubber teat. The design of the bottle was impossible to keep clean and was condemned by the medical profession. In spite of this, it continued to sell well into the 1920's[36].

Banjo-shaped feeder

Banana-shaped bottle

[36] *http://www.babybottle-museum.co.uk/murder.html*

Manche` also refers to the industrially-produced milk products on the Maltese market in the first decade of the twentieth century. The products, including both bottled and powdered milk, were promoted in the media. Many women were making use of these because they were cheap, were easily prepared, and were more or less sterilised. However Manche` was adamant that these products were not to be given to the infant before six months of age since these were often deficient in their fatty content being mainly composed of sugar, starch and salt. After six months of age, these could be given to the child mixed in warm water or milk and given by bottle. Weaning with solid food was to start at nine to twelve months of age[37].

The preference given to breastfeeding over artificial feeding by Manche` is reflected by the significant number of foundlings and other children in government institutions who were given out for wet-nursing during the period [1903: 141 infants at a cost of about £140; 1904: 198 infants at ~£180]. This practice continued well into the 1930's [1921: 106 infants at a cost of £499; 1922: 60 infants

[37] L. Manche, E.L. Vella, 1907: *op. cit.*, p.24-26

at £500; 1929: 29 infants at £493; 1930: 154 infants at £536; 1937: 188 infants at £692][38]. This subsidy was eventually transferred to a subsidy for milk for babies in the 1940's. This subsidy is still being made available by the Social Welfare system to necessitous mothers who are unable to breast feed their young[39].

One company that was importing condensed milk to Malta at the turn of the century was the Nestle' Group. This started commercial activities in Cottonera around 1900 through ship chandlers and in 1905 a sales-office of the newly created Nestle' & Anglo-Swiss Condensed Milk Co was opened in Valletta. In 1923, a Nestle' subsidiary company was established in Valletta-Marina as Nestle' Milk

[38] R. Micallef: Office of the Comptroller of Charitable Institutions. *Malta Government Gazette supplement*, 8th December 1905, 4867:p.2-3; A. Galea: Office of the Charitable Institutions. *Reports on the working of the government departments during the financial year 1922-23*. Government Printing Office, Malta, 1925, Section Q:p.3-5; F. Mercieca: Office of the Charitable Institutions. *Reports on the working of the government departments during the financial year 1930-31*. Government Printing Office, Malta, 1932, Section R:p.12-14; A.V. Bernard: *Annual Report on the Health Conditions of the Maltese Islands and on the Medical and Health Department for the year 1937*. Government Printing Office, Malta, 1938, p.LVIII

[39] Is-*Servizzi Sociali f'Malta*. Ministry of Work, Culture and Social Services, Malta, 1981, p.5

Co Ltd. The manager for this company in Malta was CIE Hurt-Davies[40]. In 1939, the Nestle' & Anglo Swiss Milk Products Ltd published an information booklet in Maltese entitled *Twissijiet lill-Ommijiet Zghazagh* which dealt with child and infant care[41].

Goat's milk was rarely sold in bulk, the consumers preferring to have the goat milked at their door. However some milk was sold in cans. This, on occasion, was watered down with water in various proportions and sometimes was a mixture of goat's and cow's milk. Canned milk was generally supplied to coffee-houses, canteens, and other institutions that preferred to deal with large bulk of milk. A number of cases of "milk poisoning" were regularly reported, some ending fatally particularly in children. The cause for this was attributed more to a chemical action either on the milk or on the goat itself, the latter being

[40] *Nestle's Diary 1998* - Introduction
[41] G.G.R.: *Twissijiet lill-Ommijiet Zghazagh*. Nestle', Malta, 1939, +46p.

believed to be more probable[42]. The milk poisoning was eventually linked to mastitis in the goat[43].

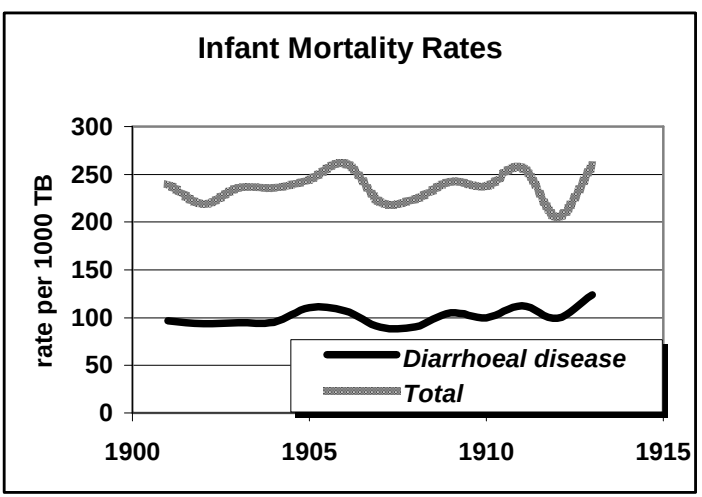
Investigations by the Mediterranean Fever Commission showed that Malta Fever or *brucellosis* was transmitted by excretion of the organism in goat's milk. This led to further investigation to assess possible transmission through human milk. The studies isolated *Brucella melitensis* from two nursing mothers. From the milk of one, 300 colonies per millilitre of milk were recovered; from the other, 50 colonies. No evidence was cited of resultant infection in the nursing child. No case of *brucellosis* in infants due to this cause has ever been recognised[44]. A Milk Pasteurisation Scheme was introduced in 1939 after the publication of

[42] T. Zammit: The Laboratory. *Public Health Department. Report for 1897*. Daily Malta Chronicle, Malta, 1898, App.P; T. Zammit: *Public Health Department. Report for 1898*. Daily Malta Chronicle, Malta, 1899, App.T:p.2

[43] RP. Sammut: General Health report 1903-04. *Malta Government Gazette supplement*, 14th October 1904, 4761p:5; T. Zammit: The Laboratory. Public Health Office. General Health Report for 1909-1910. *Reports on the working of Government Departments for the financial year 1909-1910*. Government Printing Office, Malta, 1910, J:p.48

[44] JWH Eyre, JG McNaught, JC Kennedy, T. Zammit: 1. Report upon the bacteriological and experimental investigations during the summer

"The Pasteurized Milk Regulation, 1938" published as Government Notice No.504 of the 23rd December 1938, which established that no milk other than pasteurised shall be sold or offered for sale in any part of Valletta, excluding condensed, preserved or powdered milk imported from abroad in sealed containers[45].



The significant contribution played by diarrhoeal disease in the causation of infant mortality was strongly highlighted

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of 1906. *Reports of the Royal Society of London, Mediterranean Fever Commission.* Harrison & Sons, London, 1907, Part VI, p.3

by the second decade of the twentieth century. Dr. G. Caruana Scicluna, the Chief Government Medical Officer, in his annual report for 1913 listed the infant mortality rate by cause of death for the period 1901-1913 and clearly showed that diarrhoeal disease accounted for about 40-50% of all infant deaths. There were no deaths resulting from "want of breast milk, starvation" in the series[46]. Within a decade, the relationship between diarrhoeal disease and the method of infant feeding was being recognised. Dr. A. Critien C.G.M.O. in 1921 noted that the infant mortality rate in Gozo was lower than that in Malta and continued that "of the underlying causes of gastro-intestinal diseases in infancy is the method of feeding - breast against bottle. Happily breast feeding is still general in Gozo, and in spite of poverty and adverse sanitary and social circumstances it is proving the chief great cause of the difference in the mortality as between Malta and Gozo"[47]. Dr. Critien was

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[45] A.V. Bernard: *Annual Report on the Health Conditions of the Maltese Islands and on the Medical and Health Department for the year 1938*. Government Printing Office, Malta, 1939, p.XVI

[46] G. Caruana Scicluna: *Reports on the working of the government departments during the financial year 1913-14*. Government Printing Office, Malta, 1914, Section I:p.2

[47] A. Critien: *Report on the Health of the Maltese Islands during 1921-22*. Government Printing Office, Malta, 1923, p.4

also a strong proponent for the boiling of milk before imbibing - mainly in the drive to prevent brucellosis. He was strongly against the belief that the goat's milk became less nutritious when boiled and quoted the contemporary paper by Dr. Janet E. Lane-Clayton MD DSc published in 1912 relating to the available data in regard to the value of boiled milk as a food for infants. He concluded that "there can be no excuse for anyone omitting to take such an obvious, easily applicable and practically inexpensive precaution. Carelessness in this respect is foolish, as our health and life are at stake for no immediate or remote benefit"[48]. The importance of education vis-a-vie breastfeeding in reducing infant mortality was emphasised by Dr. Critien in 1925 when he commented that "even breast feeding will fail as one of the means to reduce infant mortality unless certain definite physiological rules are adhered to. Maternal instinct does not supply this knowledge. So that unless mothers are taught how to breast feed and told of the positive dangers of irregular feeding, overfeeding, indiscriminate supplementary feeding and

[48] A Critien: *Reports on the working of the government departments during the financial year 1919-20*. Government Printing Office, Malta,

untimely weaning, they are sure to misuse the greatest opportunity nature has put in the way of their offspring"[49].

The concerns relating to maternal and infant welfare led to the setting up by voluntary effort assisted financially by the Government of a society called the "Mothers and Infants Health Association" in February 1919. The Association proposed the holding of periodical meetings of mothers at which advice and simple class teaching would be given on the hygiene of infants, on the feeding and clothing of infants, on the prevention of disease and infant sick nursing. The Association also set out to establish free baby clinics and home visits, besides making available milk and other infant foods at cost price or free to necessitous mothers[50]. Advice about breast and artificial feeding was given in the form of lectured delivered in Maltese by medical members of the Executive Committee of the Association of Mothers'

1921, Section I:p.5

[49] A. Criten: Maternity and Child Welfare. Report on the Health of the Maltese Islands during 1924. *Malta Government Gazette supplement*, 2nd October 1925, XLV:p.2

[50] A. Critien, 1921: *op. cit.*, I:p.5-6

Meetings held at Zejtun, Zebbug, and Mosta[51]. In addition District Nurses at the Government Dispensaries were employed to visit newly confined mothers and instruct them of the principal requirements for the health upbringing of the baby. In 1924, a total of 2968 mothers [38.4% of all registered births] were visited by the District Nurses[52].

In 1932, a combined scheme for Antenatal and Postnatal consultations was proposed by the Department of Health for mothers of the poorer classes. The object of the postnatal clinics were to serve as baby clinics "to secure the medical supervision of infants and nursing mothers with special reference to the nutritional disorders of children caused by dietetic errors and to the conservation of breast feeding", and "to instruct mothers in the care of their babies and give them domestic and hygenic advice". In

[51] A. Criten: Maternity and Child Welfare. Report on the Health of the Maltese Islands during 1920-21. *Malta Government Gazette supplement*, 30th December 1921, LXVII:p.6
[52] A. Critien, 1925: op. cit., p.6

addition the Medical Officer was expected to visit illegitimate babies brought up by foster mothers[53].

The attempts are educating mothers in matters relating to infant care and feeding were further addressed at the literate population though the renewed publication of information literature in the vernacular. In 1932, Dr. Guze Bonnici (b.1907 d.1940) published a book about child-care *It-Trobbija tat-Tfal*. This was divided into three main sections dealing with the pregnant woman and delivery, the second with infant care, and the final section with child-care[54].

Dr. Bonnici in 1932 continued expounding similar concepts relating to infant feeding as his antecedents. He promoted breast milk as the ideal form of infant food that should be given by the mother until six to nine months of age. Both the infant and mother benefited from breastfeeding, the latter benefiting by earlier resolution of the genital organs in the puerperium.

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[53] A. Critien: Ante-natal and Post-natal Consultations. Combined Scheme. *Report on the Health of the Maltese Islands during 1932*. Government Printing Office, Malta, 1933, Appendix S:p.LX-LXI

[54] G. Bonnici: *It-Trobbija tat-Tfal*. Malta, 1932, +35p.

GIUSÈ BONNICI, B.Sc., M.D.

IT-TROBBIJA TAT-TFAL

BI PREFAZIONI TAL
PROF. GIUSE' ELLUL, B.Sc., M.D.

Tip. LUX

The initiation of breastfeeding was to be soon after birth to ensure that the colostrum or early milk was given to the infant. This stimulated the infant's bowels, while the process of breastfeeding stimulated milk production by the mother. In the first day of life, the infant was to be fed every six hours, increasing to four-hourly on the second day of life. Feeds were to last only ten minutes, since milk production was deficient during these two days and longer feeding times predisposed to cracking of the nipple. No other food was to be given the child except a warm sugar solution. Milk production was initiated on the third and fourth day, to the extent that breast engorgement with pain and possibly a slight rise of temperature ensued. This was to be managed by warm compresses and breast massage to reduce the engorgement. Breastfeeding further helped reduced the engorgement. Subsequent infant feeding was managed on a timed regimen to prevent indigestion. Feeds were to be given every three or four hours during the day. No feed was to be given during the night [between 10 o'clock p.m. and 6 o'clock a.m.]. Demand feeding whenever the infant cries was to be avoided. Warm sugar solution

could be given at any time and was in fact considered beneficial to the child.

To breastfeed, the mother was to be seated comfortably to enable the infant to take the nipple adequately. Ten to fifteen minutes of feeding was considered sufficient, but it was essential to ensure that the infant partook all the milk in the breast at each session since the final portion was considered the most nutritious. In women who have a very good milk production, the breasts should be alternated with each feed - those with poor milk production should breastfeed from both breasts at each session. At the end of each feed, the nipple should be washed with boric acid and the breast supported with a maternity bra.

If milk production was insufficient to fulfil the infant, then the feed could be supplemented with an alternative such as ass' milk, cow's milk or "Glaxo" formula milk. Cow's milk was considered the best alternative since it matched more closely human milk and was cheaper. Cow's milk had more proteins, less sugar, and equal proportions of fats. Cow's milk was to be diluted with boiled water and sweetened in

proportions depending of the age of the infant. Since the milk is now diluted, cream or fish oil [about five drops] was to be added. The dilution was in the proportion of one portion milk to two portions water for the newborn; concentrating this with age so that at two months the proportions were one is to one, increasing so that by ten months only undiluted milk is given. Cow's milk was to be boiled before being given to the child. It was advised that in the summer months, it was better to use preparations of "Glaxo" formula milk. Supplementary feeds were to be given by a spoon rather than a bottle, since the latter would interfere with breastfeeding. A bottle was useful when the infant was going to be fully artificially fed.

The bottle was to be kept scrupulously clean. The ideal bottle was that shaped like a boat, which had a teat at one end and a valve at the other. After use, the bottle, teat and valve were to be well boiled and placed in previously boiled water and kept covered. The bottle was to be scrubbed clean daily with a brush and hot sodium carbonate solution. The teat and valve were to be boiled for one minute. Bottle-fed infants were to be given some dilute

orange or grape juice after the age of one month to furnish the necessary vitamins. Weaning was to take place only at seven months of age.

The breastfeeding mother was to keep a calm and regular lifestyle, avoiding strong emotions. Milk produced during strong emotional episodes was to be removed and thrown away. Breastfeeding could be continued even if the mother became pregnant again provided she felt fit. In these circumstances, breastfeeding was to stop in the sixth month of pregnancy. The onset of menses was also not a reason to stop breastfeeding. The pacifier was not to be used since it was considered very harmful contributing to pulmonary expansion [!], interferes with jaw development and predisposed to infections.

Contents	***Human***	***Goat***	***Cow***	***Ass***
Proteins	1.52	4.06	4.48	1.82
Fats	3.55	5.14	3.13	0.11
Sugars	6.50	5.28	4.77	6.08
Salts	0.45	0.58	0.60	0.34
Total solids	12.02	15.06	12.98	8.35
Water	87.98	84.94	87.02	91.65

Composition of Milk [after G. Bonnici, 1932]

Women were duty-bound to breastfeed their child provided they did not harbour illness such as tuberculosis, uncompensated heart conditions, chronic kidney disease, or a severe infection. The first three conditions were also considered contraindications to pregnancy. Alternative to breast and bottle feeding, was the use of the wet-nurse who was to be chosen carefully after consultation with the physician. She should have delivered at least six weeks previously and not more than seven or eight months. She should be aged 20-35 years, married preferably multiparous[55].

Even commercial milk producers apparently promoted breastfeeding as the preferred method of infant feeding. The "Cow & Gate" commercial milk company published a list of pertinent advice in point format entitled *Motherhood*, which list was included in English and a Maltese translation in Juan Mamo's book *Obstetricia Illustrata: Tgharrif fuq it-Twelid bil-Qabla w it-Tabib* published in 1939. The publication included advice enticing women not to wean their infants until the age of nine months. Weaning was to

[55] G. Bonnici, 1932: *op. cit.*, p.14-17

be gradual and progressive with the introduction of Cow & Gate products. *Motherhood* also included advice about feeding patterns aimed at feeding six times during the day except in exceptional circumstances and that no feeds were to be given during the night when only water was to be given. No feeds were to be given between the scheduled feeds - any fretfulness was to be managed by water alone. Feeding should be done slowly; overfeeding was to be avoided. Comforters were not to be used. Cleanliness was emphasised with advice given to cover all milk and food; to boil and cool all water given to the child; to clean breasts, bottles, nipples, teats and napkins; and not to tolerate flies[56]. Contemporary to the Cow & Gate's publication *Motherhood* translated in Maltese by Mamo, was the publication published by Nestle' & Anglo Swiss Milk Products Ltd *Twissijiet lill-Ommijiet Zghazagh.*

With the start of hostilities of the Second World War, the Department of Health augmented its maternity and child welfare services by detailing Prof. W. Ganado MD BSc

[56] G. Mamo: *Obstetricia Illustrata. Tgharrif fuq it-Twelid bil-qabla w it-tabib*. Malta, 1939, +80p.

[Professor of Physiology] for infant welfare work. He paid special attention to dormitory shelters and refugee centres where instruction in infant care was given to mothers. He further delivered a series of lecture to mothers, to midwives, and to District Nurses, which were repeated in eight separate districts. Emphasis was laid on the necessity of breastfeeding and its advantages on artificial feeding especially under the circumstances in which the mothers found themselves at the time. Two talks on "Breastfeeding" and "Artificial feeding" were broadcast on the Rediffusion system[57].

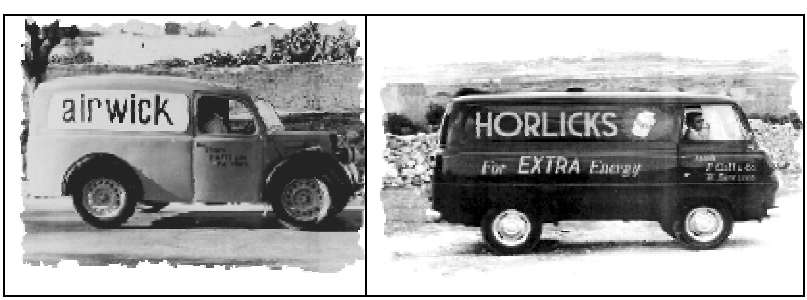
Besides the products imported by local agents for Cow & Gate and Nestle', other forms of condensed milk were being imported to Malta. These included: (1) "Frisian Flag" - evaporated cow's milk imported from Holland; (2) "Atlas Milk" - condensed, sweetened or evaporated milk from Denmark; and (3) "Van Heel's Milk" products including unsweetened evaporated milk and full-cream sweetened

[57] A.V. Bernard: *Annual Report on the Health Conditions of the Maltese Islands and on the Medical and Health Department including the Emergency Medical Services for the year 1940*. Government Printing Office, Malta, 1941, p.X-XI

milk ["Light-house brand"]. The latter was advertised as superior suitable for everybody particularly for infants[58].

[58] *Lyceum Magazine*. January 1938, vol.1, no.8, adverts

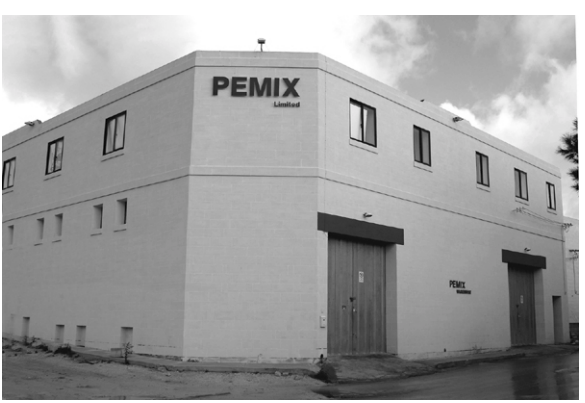
A significant importer of infant feeding products in Malta was the wholesale company known as P. Gatt & Co. Ltd. set up in 1958 initially with a view of operating principally in the northern part of Malta. In subsequent years the terms of operation of P. Gatt & Co. Ltd were changed to one of import and distribution and eleven years later the company name was changed to IMPEX Limited. In 1972, the shareholders of IMPEX Ltd were joined by Mr. Joseph Camilleri and Mr. Paul Micallef, who became the driving force behind the company.



Early IMPEX Ltd delivery vans

The company extended its operations to the rest of the island, commencing its trading operations from its premises in Malta's capital city, Valletta. IMPEX Ltd. adopted a clear strategy aimed at a careful evaluation of the needs of the

Maltese market intended to gradually introduce various high quality products. This strategy resulted in a continuous growth of the company so that in 1984 new larger premises became necessary. Suitable facilities were acquired in Mosta and the Company shifted its operations to Impex Court, Mosta. In 1999, because of confusion created by the presence on the Islands of companies with similarly sounding names, the Board decided to change the company's name to PEMIX Limited. Since then, in October 2000 Pemix House was inaugurated in a more centralised location within the same confines of Mosta. These new premises house the new offices of PEMIX and the other subsidiary companies.



The Second World War brought about a tremendous upheaval in the social circumstances of the population that set the pace for changing attitudes towards the woman's role in society, and through the increasing visual media exposing the population to changes that were occurring on the European continent and America. These included significant changes in attitudes towards breastfeeding. In Europe and America, the increasing proportions of women who joined the work force helped promote a move towards artificial feeding of the young since this was considered more convenient. The proportion of American women who initially breastfed their young deceased progressively so that by 1972 only 22% of infants were being breastfed[59]. In Malta the move towards artificial feeding appears to have occurred around the late 1950s since interviewed second-time mothers who breastfed their infants in the mid-1950s opted for artificial bottle-feeding in a subsequent pregnancy

[59] C. Hirschman, G. Hendershot: *Trends in Breastfeeding among American Mothers*. US Government Printing Office, Washington, 1979, +39p.

in the early 1960s. By 1977, the initial breastfeeding rate in Malta had fallen to 19.3%[60].

The increasing preference towards bottle-feeding occurred in spite of the efforts made by some Maltese physicians to promote breastfeeding as the ideal form of infant's nutrition in published vernacular medical education. The CANA Movement in 1959 published an informative booklet in Maltese dealing with various aspects of pregnancy and labour. This book authored by Dr. Franco Bencini went through four editions within 13 years, the fourth edition being published in 1971[61].

Dr. Bencini initiates his discussion on infant feeding by extolling the value of breastfeeding since this was the natural food of the infant, gave the infant protection against certain disease, and had convenience of use. The author continues to give advice about breastfeeding expounding similar views as his predecessors. He advises that the infant does not require

[60] C. Savona-Ventura, E.S. Grech: Infant feeding in Malta. *J. Psychosom Obstet Gynaecol*, 1990, 11:107-117

much feeding in the first two days of life. The first feed for hospital-born infants was given at about twelve hours after delivery, this lasting for only two minutes. Subsequent meals were to last five minutes at each breast. By the fourth day, the infant was to receive ten-minute feeds from each breast. Breastfeeding periods of more than fifteen minutes were discouraged since these simply contributed to the mother and child becoming tired. The mother was to ensure that the infant was burped every four or five minutes of feeding.

Breastfeeding rates were dependent on infant weight. Infants weighing more than six pounds were to be breastfed every four hours; while infants weighing less than six pounds were to be fed every three hours. While the advice presupposes a regimented system of feeding, Dr. Bencini emphasizes that one had to be flexible and not be fully tied down to the recommended time patterns. However, he continues to list what he believed to be the ideal feeding regimen based on the four-hour regimen. The first feed of the day was to take place at 6 o'clock. This was followed by feeds at regular four-

[61] F. Bencini: *Xi Grazzja se jkollna tarbija*. 1st ed. Empire Press, Malta, 1959; 2nd ed. G. Muscat Co. Ltd., Malta, 1961; 3rd ed. G. Muscat Co.

hourly intervals [10.00, 14.00, 18.00, 22.00, 02.00 hrs]. After one month, the infant should dispense with the night feed at 02.00 hrs, and by two months even the 22.00 hrs feed would be dispensed with.

Ltd, Malta, 1966; 4th ed. G. Muscat Co. Ltd., Malta, 1971

Dr. Bencini gives further advice about the technique of breastfeeding; he however gives no advice about techniques for bottle-feeding. Ironically, all the diagrams included in the booklet depict bottle-feeding of the infant and no diagrams are included depicting breastfeeding. The diagram blocks for the publication were made available by the local agents for the infant formula produced by Glaxo Laboratories Ltd. [Louis Vella Ltd., Valletta] whose product "Ostermilk" featured as a back-page advert.

Similar attitudes are evident in the patients' handbook distributed by the church-run St. Catherine of Siena Hospital [maternity services est. 1961; closed down 1980]. The handbook states that "babies are taken to the mother's room five times a day for feeding only. At other times they were kept in the Nursery under the watchful eye of a Sister. This guards against infection and allows the mother as much time to rest as possible." This attitude presupposes a timed-feeding regimen. This short handbook was also sponsored by the

infant formula agents promoting Nestle products with back-page adverts for "Nan"[62].

By the early 1980s, the initial breastfeeding rates had reached alarmingly low levels. A Pilot Survey to determine parturient mothers' previous infant feeding practices showed that in a population of 2449 interviewees, 27.6% of women whose previous child was aged four years or less had breastfed their infant. In contrast, only 19.3% of women with infants older than four years reported having breastfed their infant. This alarming observation served as an impetus to initiate a constant educational effort using all forms of the media to promote the advantages of breastfeeding. By 1983-85, the initial breastfeeding rate had increased to 45.9%, increasing further to 66.3% in 1986[63].

Prolonged breastfeeding was similarly very low with only 2.3% of women reporting breastfeeding their young at six months of age in 1981. This figure had increased to 6.2% in 1984. While the number of women who continued to

[62] *Maternity Wing - Patients' Handbook*. Dominican Sisters: Malta n.d, +4p.

breastfeed their infant had increased, those who stopped did so sooner. In 1981, 71.6% of initial breastfeeding mothers were still suckling their infant at three months of age; while only 9.8% still did so at six months of age. The figures reported for 1984 were 36.6% and 11.2% respectively [see figure below][64].

Breastfeeding rates with time

The various surveys carried out during the period 1981-1987 confirmed that various socio-biological factors did influence breastfeeding patterns. Thus the Maltese woman who artificially fed her child was more likely to be of low

[63] C. Savona-Ventura, E.S. Grech, 1990: *op. cit.*
[64] C. Savona-Ventura, E.S. Grech, 1990: *op. cit.*

educational standard and was more likely to smoke cigarettes. She was more likely to be aged more than 35 years and be multiparous. Mothers delivered by Caesarean section were less likely to opt for breastfeeding. The reasons quoted by women for opting not to breastfeed were various, but could be attributed to lack of sufficient education. The commonest reason quoted for cessation of breastfeeding appeared to be "insufficient milk" or a "too demanding baby"[65].

The 1980s saw a determined drive by the Health authorities in Malta to promote breastfeeding among the parturient population through a 'demand policy' campaign. Demand policies attempt to increase the woman's motivation to breastfeed by education of women and health personnel, by changing hospital practices to facilitate breastfeeding, and limit advertising of infant formulas. The Health Education Unit of the Department of Health issued information booklets in English and Maltese entitled *Breast-feeding is Best* for distribution to all women attending antenatal care or delivering in government facilities. This gave detailed

[65] C. Savona-Ventura, E.S. Grech, 1990: *op. cit*

information about the benefits of breastfeeding and about the correct methodology for feeding. The booklet abandoned the timed-regimens proposed in the earlier decades advising a compromise between infant demand feeding and what fits in with the rest of the family routine. Suckling was to continue until the infant released the breast spontaneously. Supplements to breast milk were to be introduced after three months of age[66]. Another contemporary handbook was published in 1981 by the Department of Health and distributed to all parturient women delivering in the government hospital. This described the new maternity hospital and gave instructions about antenatal and postpartum care. This also strongly emphasized the benefits of breastfeeding[67]. In addition the Maternity School started organizing parentcraft classes that included information about infant feeding and emphasized the benefits of breastfeeding. These classes became a regular feature during the 1980s with attendance increasing from 290 expectant mothers in 1981 to 1341 in 1986.

[66] D.O.H.: *Breastfeed is best*. Health Education Department, Malta, n.d., +14p.
[67] D.O.H.: *Kumpless ghall-Omm u t-Tarbija*. Government Press: Malta, 1981, +30p

They supplemented those parentcraft classes initiated by the CANA movement. These efforts were supplemented by the setting of the Breastfeeding Mothers section of the Mother & Baby Club that served to act as a support group for lactating women. This support group further distributed information

leaflets to parturient women[68]. Further efforts to assist mothers to breastfeed were made by the introduction of maternity leave benefits that included five weeks of the postpartum period.

This promotional drive was maintained throughout the 1990s by the Health Education Unit, the Nutrition Unit, the Midwives Association, the Midwives Union, Breastfeeding Mothers - Mother & Baby Club, and the Obstetric Department of St. Luke's Hospital. These published information leaflets distributed to all parturient women[69]. In addition other publications aimed at newly-delivered mothers were published by other private-run hospitals and individuals[70]. The paid 13-week maternity leave was further augmented by the introduction of unpaid 12-month maternity leave - measures that in part aimed to augment breastfeeding patterns. In 1989, the WHO and UNICEF jointly sponsored the Baby Friendly Hospital Initiative in order to promote

[68] *Taghrif fuq il-'Breastfeeding'*. Breastfeeding Mothers - Mother & Baby Club, Malta, n.d., +6p.
[69] *To the Baby give the best give the natural -Lit-Tarbija aghtiha l-ahjar aghtiha n-naturali*. 1st ed. n.d.; 2nd ed. 1994, D.O.H., Malta

breastfeeding on an international level. In 1998, the Department of Health sent a circular letter to all medical practitioners, pharmacists and nursing-midwifery staff in the government hospitals promoting the International Code on the Marketing of Breastmilk Substitutes. This Code discourages the distribution of free samples of artificial milk to mothers, and advises that promotional items from companies should not be displayed in clinics, pharmacies and waiting areas[71].

A Breastfeeding Policy Monitoring Committee was established in Malta in 2000 to introduce the WHO guidelines. The Maternity and Pediatric Departments at St. Luke's Hospital issued a "Breast-feeding policy" in line with the World Health Organization statement[72].

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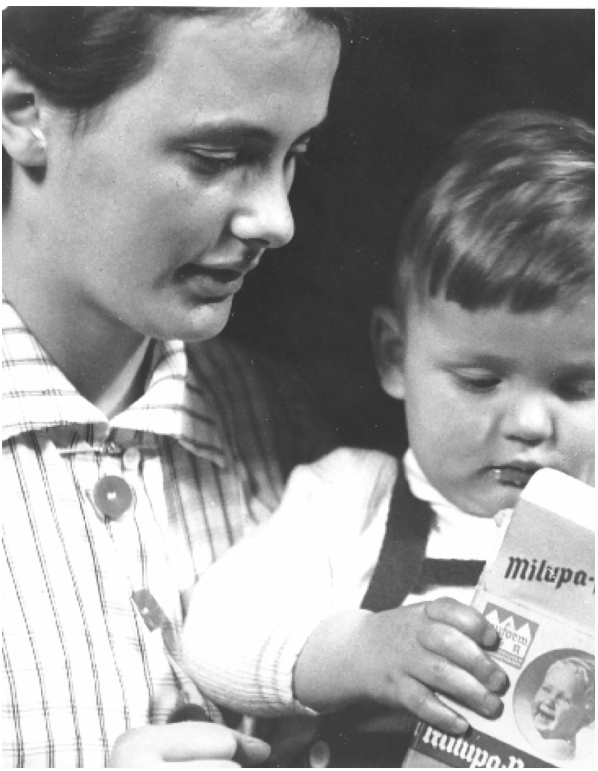
[70] R. Borg-Xuereb: *Hajja Gdida*. Klabb Kotba Maltin: Malta, 1st ed. 1992, +104p.; 2nd ed. 1995; A Guide to Breast Feeding. St. Philip's Hospital, Malta, n.d., +12p.

[71] J.M. Cachia: *Breastfeeding and Breastmilk Substitutes*. Circular letter dated 26th October 1998, Departmentof Health, Malta [DH 1081/98; DH Cir. No. 138/98]

[72] *Breast-feeding Policy, Karin Grech Hospital*. Paediatric & Maternity Department, Malta, n.d.



The policy states that “the baby should be put to the breast as soon as possible after birth, unless there is a contraindication. At this time the baby is alert, has a good sucking reflex and this feed, which need be of only a few minutes, boosts the confidence of the mother who frequently has the instinct to feed her baby at this time. The mother's confidence should be

boosted and encouragement given. The number of mothers who truly are unable to breast feed their babies are few. Therefore every support should be given to breast-feeding mothers by the staff."

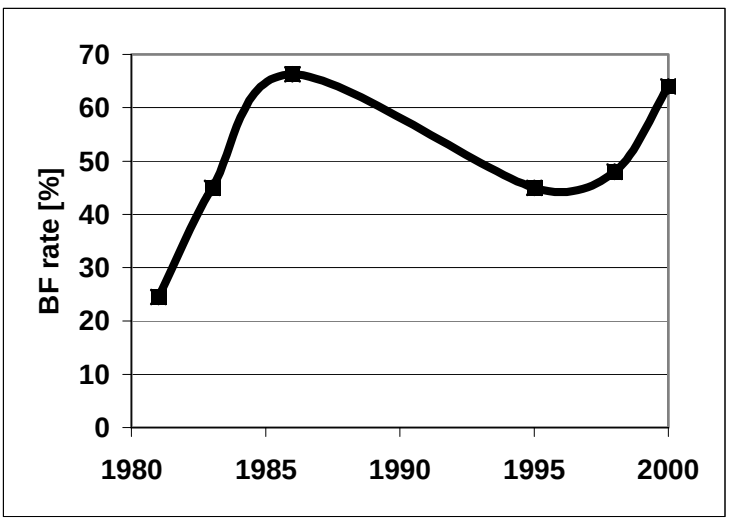
"Correct positioning of the baby at the breast is of paramount importance to ensure the baby strips the colostrum/milk from the breast and so gains full nourishment, and stimulates the further production of milk. Correct positioning prevents sore nipples. The baby should feed at one breast for as long as he wishes in order to gain the high calorie "hind milk". The other breast may be offered when the first has been emptied. There should be no strict timing or strict limitation of feeding times, but in general feeds should not be given more frequently than every two or three hours and should not last more than 30 mins. The baby should be fed on demand and there may be great variation in the frequency of feeds particularly during the early days. Care should be taken that each feed is adequate to prevent undue wakefullness; and that if feeds are widely spaced i.e. more than five hours during the day, hypoglycaemia does not occur. The giving of complimentary feeds should not be necessary if suckling is

adequate. In completely breast-fed babies, the gut flora inhibits the growth of pathogens. This can be adversely altered even with one artificial feed. Also, such artificial feeds mean that the breast is not stimulated and therefore less milk is produced. Lactation is on a "demand and supply basis". If artificial feeds are given during the first two-three days, the breasts may not be emptied properly and engorgement may result when the milk "comes in". Regular, frequent suckling helps to prevent engorgement. If the mother has doubts about the amount of milk the baby is having, she can be reassured by weighing the baby to document weight gain. Normally a healthy baby regains the birth weight by 10 to 15 days after birth." The present policy towards breastfeeding is outlined in the publication by the Health Promotion Department entitled *Breastfeeding Successfully -Il-Halib ta' l-Omm u l-ahjar mod kif tredda'* [73].

In spite of the measures taken all concerned, the initial breastfeeding rates have no gain from the rate of 66.3% reported in 1986. The rate apparently decreased during the

[73] *Breastfeeding Successfully -Il-Halib ta' l-Omm u l-ahjar mod kif tredda'.* Health Promotion Department, Malta, n.d. +16p.

1990s to a level of 45% in 1995. The reported initial breastfeeding rate during the period 1999-2002 has again risen to the order of 62.5% [see figure below][74].

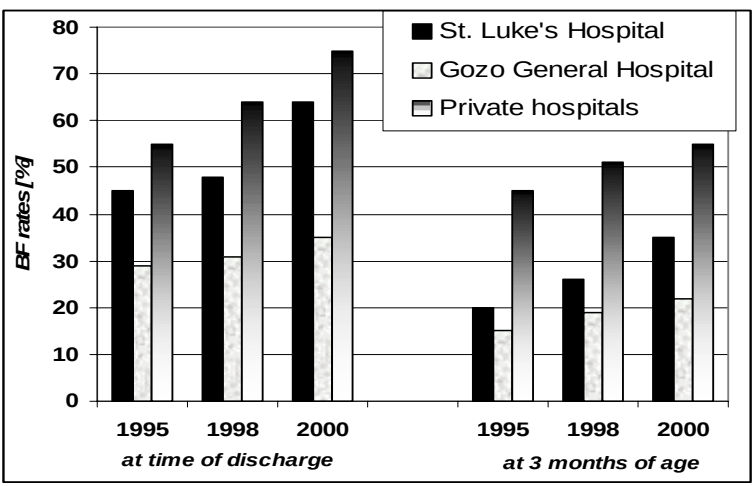


Initial Breastfeeding rates

The initial breastfeeding rates were very much lower in women delivering in Gozo and higher in women delivering

[74] S. Attard Montalto: Breastfeeding, Malta 2002. *Malta Medical Journal*, 2002, 14(1):p.37-41; C. Savona-Ventura: Secular trends in

in the private hospital in Malta. The difference in breastfeeding rates were maintained even at three months of age [see figure below][75].



The policy of "Breast is Best" still applies today. However while every effort should be made to assist the parturient to breastfeed her infant, this endeavor should not be made at the cost of pressurizing the mother who is unable or absolutely

Obstetric practice in Malta. *in press*

[75] S. Attard Montalto, 2002: *op. cit.*

unwilling to lactate her young. The artificial preparations today and the general level of hygiene in Maltese society makes bottle-feeding save, even if not ideal and totally natural.