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Early, Exclusive Breastfeeding as a Means to Reduce Under-Five and Maternal Morality: A Proposed Community Mobilization Intervention in Uttar Pradesh, India

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Early, exclusive breastfeeding as a means to reduce under-five and maternal mortality: A proposed community mobilization intervention in Uttar Pradesh, India

Catherine Domanska

Abstract

The ethical and legal dilemmas surrounding gestational surrogacy are complex and abounding. A gestational surrogate is paid to be implanted with a fertilized ovum genetically unrelated to her and carry a pregnancy for a commissioning couple. The legal determination of maternal rights and the enforceability of surrogacy contracts are among many ethical dilemmas. Nurses must effectively communicate with gestational surrogacy parties and understand that ethical dilemmas may arise. This brief report summarizes the perspectives that pregnancy may be unethical due to manipulation and commodification, that anti-surrogacy arguments are flawed, and that it is difficult to deem surrogacy as immoral, and finally discusses four paradigms for determining legal maternity. In conclusion, federal legislation to standardize surrogacy laws is recommended and elaborated upon.

The benefits for infants of early breastfeeding within the first hour of life and exclusive breastfeeding for six months of life are well-documented and have the potential to reduce under-five mortality. Less well-documented and disseminated to the public are the benefits that breastfeeding has for infants of HIV-positive mothers and the benefits that it has for mothers themselves including increased maternal survival. These benefits have especially important implications for neonatal, under-five and maternal health and mortality in developing nations. Efforts should be aimed at these areas to encourage early and exclusive breastfeeding (EIEBF). The intent of this paper is to: 1) explain the importance of breastfeeding for infants and mothers, especially those in developing nations, 2) discuss why many women around the world are not following EIEBF guidelines, 3) address the controversy surrounding breastfeeding and HIV/AIDS, and lastly, 4) illustrate how a breastfeeding intervention which mobilizes local women’s groups in rural Uttar Pradesh, India can empower women to take ownership of and resolve local maternal-child health problems, including the barriers to EIEBF that they face.

Rates and Causes of Under-Five, Neonatal and Maternal Mortality

According to the United Nations Children’s Fund (UNICEF, 2007) under-five mortality around the world is primarily due to infectious diseases and secondarily to neonatal causes with the underlying cause for one-third of all pediatric deaths being malnutrition. Maternal mortality is primarily due to hemorrhage, anemia and puerperal infection due to unhygienic birth settings and inadequate access to antibiotics (UNICEF, 2007).

In India, improvements have been made in under-five mortality from 1988-2007 with a reduction of about 25% from 125 to 72 live births (UNICEF, 2007). Neonatal death is the largest cause of mortality for Indian newborns under the age of five and the hardest to reduce with significantly less decline than other causes under-five mortality since 1981, according to a study by Lawn, Cousins, & Zupan (2006). According to India’s Millennium Development Goals (MDG)progress report (Bhavan & Menezes, 2005) under-five mortality rates in rural parts of India significantly worse when compared to urban areas.

The decline in neonatal death in India is largely due to a decline in late neonatal death, after the first week of life. Because late neonatal death is usually caused by infectious disease, rates can be affected by public health interventions such as breastfeeding, improved hygiene and vaccination. However, early neonatal deaths, more often caused by prematurity and birth injuries and asphyxia can only be significantly improved through clinical care access improvement (Lawn et al. 2006). To reduce early neonatal mortality, efforts need to be made to educate women about their rights to healthcare as well as about the early signs of sepsis and maternal stress.

In a similar time frame, as India was making strides to improve under-five mortality, maternal mortality remained virtually identical with 437 deaths per 100,000 live births in 1991 and 450 in 2005 (UNICEF, 2007). In Northern Indian states, including Uttar Pradesh, the maternal mortality rate was as high as 832 based on estimates from 2002 (Bhatt). Hemorrhage is the leading cause of maternal mortality in India and globally. A knowledge deficit of the signs and symptoms of post-partum hemorrhage causes many women and their caregivers to delay or never seek medical care when bleeding begins (Ali et al., 2001). View and increased efforts also have to be made to educate women about how to prevent infection that leads to puerperal fever. It is also important to educate women about family planning methods to reduce their overall number of pregnancies and thereby reduce their risk of dying in childbirth.

The Benefits of Early and Exclusive Breastfeeding for the Infant

EIEBF interventions are cost-effective and have the potential to help us meet Millennium Development Goals (MDGs) #4: "Reduce under-five mortality by two-thirds", #5: "Reduce maternal mortality by three-quarters" and, through EIEBF promotion amongst women who are HIV-positive, #6: "Reduce the spread of diseases". Additionally, community mobilization of women's groups which is to address the specific concerns of women in regards to their family life can address MDG #3: "Empower women and promote equality between women and men", and potentially #1: "Halve extreme poverty and hunger" and #2: "Achieve universal primary education".

In 2003 the World Health Organization (WHO) published the “Global Strategy for Infant and Young Child Feeding” in which they specifically addressed breastfeeding. They stated that "breastfeeding is an unequalled way of providing ideal food for the health, growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers...infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health.”

WHO also emphasizes that "breastfeeding is a learned behaviour" and that “virtually all mothers who breastfeed provided they have accurate information, and support” and that they also have a right to “skilled practical help from...trained health workers, lay and peer counselors, and certified lactation consultants, who can help to address mothers’ confidence, improve feeding technique, and prevent or resolve breastfeeding problems” (2003).

The benefits of breastfeeding compared to formula feeding for infants are extensive. Foremost, it provides passive immunity and unparalleled nutrition and is far less likely to be contaminated and cause diarrhea than formula. However, it must be emphasized that only with early, exclusive breastfeeding are many of these benefits fully conferred.

Early breastfeeding within one hour after birth ensures that the infant is skin-to-skin with the mother which can reduce the risk of hypothermia and help establish an early maternal-child bond (Gabriel et al. 2009). It also ensures that the infant receives colostrum which provides the a large concentration of protective antibodies and essential nutrients (UNICEF, 2009) and stabilizes blood-glucose levels, thereby preventing hypoglycemia (Hufnig, Zehner & Victoria, 2001). Breastfeeding within the first hour of life has the potential to prevent almost one-quarter of all neonatal deaths and if started the first day, over one-sixth (Edmond et al. 2006).

The exclusivity of breastfeeding, instead of offering supplemental feeds like formula or sugar-water is very important. First of all, exclusive breastfeeding ensures that the mother will be able to maintain her milk supply based on the principle of supply and demand. Secondly, there are many nutritional and health benefits for the infant. Because of the abundant benefits, the World Health Organization (WHO) currently recommends that all healthy infants born to HIV-negative mothers are breastfed exclusively up to six months (2002). Research has shown that breastfeeding reduces the incidence of diarrhea and acute respiratory infections (Arfield et al., 2001), exclusive breastfeeding up to six months and then continued breastfeeding with supplemental feedings up to twenty-four months can prevent up to 1.3 million deaths or 13% of all under-five deaths (Beasley & Amin, 2002). The exclusive breastfeeding rate in many parts of Africa (Edmond et al, 2006) and Southeast Asia (UNICEF, 2007) non-exclusive breastfeeding is widely practiced up to two years yet under-five mortality, primarily from neonatal causes, diarrhea and pneumonia, is still highest in these areas (Black, Morris & Bryce, 2009).

Maternal Benefits of Breastfeeding

The benefits of breastfeeding for the mother are not only physical, but also economical and psychological. Physically, right after birth, the mother’s risk of post-partum hemorrhage is reduced when she breastfeeds within one hour (Chelnow & O'Brien, 2006). Research done by Gabriel et al. (2009) shows that breastfeeding with skin-to-skin...
contact immediately after birth decreases the mean time of uterine expulsion thereby reducing the risk of post-partum hemorrhage due to uterine retention. They postulate that this effect is related to the release of oxytocin as the infant sucks on the maternal nipples. They found that the number of postnals and postnatal massage mothers receive from holding the infant close to the abdomen. Note that this benefit is only conferred if early initiation of breastfeeding occurs.

Another important benefit from breastfeeding, with particularly important implications in developing nations, is the temporary infertility due to lactational amenorrhea that can be used for birth spacing. Birth spacing lowers a woman's lifetime risk of dying in childbirth or of related causes by reducing the number of pregnancies she has. The lactational amenorrhea method (LAM), which is 98% effective when used correctly, is recommended by the WHO and is a good option for women anywhere, particularly in developing nations where social resources are limited and they have limited access to pharmaceutical contraception. Women in developing nations are more likely to hold less power in their household and face religious, economic and access barriers that prevent them from using pharmaceutical contraception, and they are also at greater risk of dying during pregnancy and childbirth. LAM is effective up to six months post-partum if the mother has not had a menstrual period and the infant is exclusively breastfed at least every four hours throughout the day and no longer than every six hours throughout the night (WHO, 2009) (Linkegat, 2001).

Other benefits include a reduction in the risk of developing breast cancer (Lavec, 2002) and protection against post-partum stress syndrome due to increased maternal-child bonding and the relaxing effects of breastfeeding (Geier, Davis & Hempill, 2002).

Even with an overwhelming number of benefits for the infant and mother, EEBF is not still practiced globally. Current rates of early breastfeeding are only 39% and exclusive breastfeeding up to six months is only 37%, yet, up to 75% of children are partially breastfed up to one year (UNICEF, 2007). With this in mind interventions have to concentrate less on convincing mothers to breastfeed at all, but rather educating them that non-exclusive feeding with formula and other foods as well as late initiation of breastfeeding are detrimental for their infant's health.

Barriers to Breastfeeding

Barriers that women face to early initiation of breastfeeding within the first hour of life and exclusive breastfeeding up to six months are varied. They include the need to return to work, the belief in the importance of prelactal feeds, incorrect technique leading to pain during breastfeeding beliefs that formula is more modern and nutritious, feelings of inadequate milk supply, competing family responsibilities, general lack of education in regards to the benefits of EEBF and the use of a wet-nurse.

According to the Indian National Family Health Survey (2006) about one-quarter of all infants are put to the breast within one hour of birth, about half are exclusively breast fed for six months and the mean duration of breastfeeding is two years. Early breastfeeding is especially beneficial for the mother due to the widespread belief that EEBF is not only nutritionally beneficial and does not provide the volume of milk that the infant needs. Guided by these common beliefs, supplemental feeding with formula is often given to an infant as soon as the mother’s milk “comes in” because of the incorrect notion that feeding with other substances cleanses the gastrointestinal tract of meconium and colostrum does not.

Breastfeeding technique, cultural and personal beliefs and lack of education can all be addressed through interventions aimed at encouraging breastfeeding by educating women about the benefits for themselves and their infants. The ideal place to address breastfeeding is at antenatal care visit, however, many women do not seek or have access to antenatal care and so this intervention is not exclusively not reaching them. In India three-quarters of all women in the National Family Health Survey (NFHS) went to one antenatal care visit, however, only a little over one-third third went at least five times and safe breastfeeding was less than half of all pregnant women sought any antenatal care and the primary purpose was only to confirm pregnancy, rather than getting actual antenatal medical care.

Another barrier that women face is employment. The WHO states that “women in paid employment can be helped to continue breastfeeding by being provided with minimum enabling conditions, for example leaves, paid maternity leave, on-site creches, facilities for expressing and storing breast milk, and breastfeeding breaks” (2003).

In Uttar Pradesh one-third of women work outside the home, and of that one-third, one-quarter does agricultural work (NFHS, 2006). Agricultural work is more likely than many other professions to involve dangerous exposure to chemicals and dangerous work-site conditions. There may also be rules against infants and social norms that may dictate that infants should be left at home with siblings or grandparents. Although only one-third of women work outside the home, it is likely that nearly all women are responsible for the daily tasks of running the family home, which, in a developing nation can be very labor-intensive and may take the woman away from the family home to trips for markets and water sources. So, even though two-thirds of women in Uttar Pradesh do not work outside the home, breastfeeding every two to four hours may not be feasible in the face of so many other responsibilities.

HIV and Breastfeeding

Another barrier to breastfeeding that has received much attention lately is the controversy regarding the WHO policy on breastfeeding and the HIV-positive mother. The WHO (2002) recommends that if the mother is not known to be HIV-negative or does not know her status she should be encouraged to breastfeed exclusively. However, if she is HIV-positive and there is an “acceptable, feasible, affordable, sustainable and scalable” alternative she should abstain from breastfeeding completely. If alternative feeding does not fit all five criteria, the mother should be encouraged to breastfeed exclusively with no supplementation for only one month and thereafter abstain from breastfeeding.

Although this policy takes into account low-resource women, there is little monitoring to make sure that all five guidelines are followed, and in developing nations it is almost impossible to find a scenario where an “acceptable, feasible, affordable, sustainable and scalable” alternative is available. Breast feeding could be given the rights that formula feeding present. This policy sends the message that if you are HIV-positive you should not breastfeed, however, in many developing nations lack of access to clean water and formula, unaffordability to formula, and cultural norms that encourage some breastfeeding, even if not exclusive, make it difficult for women to formula feed exclusively.

Further evidence of the potential harm caused by this policy is reflected in a landmark study by Coovadia and colleagues (2007) who found that rates of HIV transmission were lower in infants who were exclusively breastfed than those who were not exclusively breastfed and received supplemental feeding. For infants already infected with HIV, exclusive breastfeeding increased twelve-month survival rates. Furthermore, the mortality rate of infants who received supplemental feeding and breast milk was double that of the rate for infants who were exclusively breastfed. This was due partially to HIV infection, but more often was due to diarrheal diseases that infants were exposed to through contaminated water to which they had poor defenses. Of note, Coovadia et al. (2007) had great success in encouraging women to breastfeed exclusively and they found that despite the guideline, women had difficulty enrolling an adequate mixed-feeding sample size although sufficient subjects were eventually enrolled.

Based on results from this study, Coovadia et al. (2007) and others (Stein & Kuhm, 2009) suggested that WHO guidelines be individualized by country and that for most developing nations HIV-positive women should be encouraged to breastfeed exclusively for six months due to the WHO guidelines take the country into account, but further research is needed to draft individual policies for each nation and for various settings.

In addition, efforts should be made to develop a questionnaire to assess women’s individual risk for non-compliance with either exclusive breastfeeding or exclusive abstinence. For example, based on the questionnaire, it could be determined that replacement feeding may be the best option for an HIV-positive, middle-class upper-middle class European woman who has consistent access to nutritious formula and whose infant has a very low risk of contracting and dying from a diarrheal disease. However, for a poor woman in rural South Africa who is HIV-positive it might be safer for her infant to exclusively breastfeed than to be exposed to contaminated water and non-nutritive feeding which could cause malnutrition.

A Breastfeeding Intervention Based on Community Mobilization Models

Successful breastfeeding interventions must not only increase EEBF rates but must also try to do that they must change the local culture of breastfeeding. The intervention must target women where they seek care and give birth. If women are not seeking antenatal care and are not delivering in institutions, as is the case in rural Uttar Pradesh, then participatory methods must take place in the towns and villages. Inventions should address implementation of the best evidence based infant feeding practices but must also reflect the priorities and sensitivities of the cultural practices that are addressed and of little concern to the local population they will not be invested in resolving the problem.

In a study done by Rosato et al. (2008), Community Participation: Lessons for Maternal, Newborn and Child Health
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Health, they defined community mobilization as “a capacity-building process through which community individuals, groups, or organizations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs, either on their own initiative or stimulated by others.” They proposed that community mobilization foster empowerment or “the process and outcome of those without power gaining information, skills, and confidence and thus control over decisions about their own lives.” If aimed at empowering women, community mobilization efforts should address concerns of women and help them initiate efforts to begin solving problems they care about.

Multiple reports of the effectiveness of the Community Mobilization Action Cycle (CMAC) developed by the Warmi Project in Bolivia noted that the intervention resulted in reductions in developing nations’ newborn mortality, under-five mortality and still-birth rates. (O’Rourke, 1998). In phase one of CMAC, project groups of women in the community come together and identify and prioritize problems. Solutions are then planned in phase 2 and implemented and evaluated in phase 3. Finally, in phase 4 the whole community again comes together and evaluates and modifies the solutions.

Other projects, such as SEARCH (Bang, 1999) built upon a preexisting community mobilization project with the goal of lowering infant mortality rates by giving in-home health education. Both types of projects were successful and showed long-term successes, however most of the projects did not address maternal mortality.

Based on this literature review, the author proposes an intervention, called Breastfeeding And Health Education Network (BAHEN), which aims to “sister in Hindi, in rural Uttar Pradesh... It will combine the CMAC model with targeted education about EEBF in the village in order to reduce under-five mortality (MDG #4), maternal mortality (MDG #5), and as these groups become more empowered they will set local goals and work towards them. Women can hopefully address MDGs #1, #3 and #4 as well.

BAHEN in Uttar Pradesh

Uttar Pradesh is located in northern India and consistently has some of the highest maternal, under-five and infant mortality rates in India (NHFS, 2006). Less than half of all pregnant women even have one prenatal visit, of which most were just to confirm pregnancy and almost 90% of deliveries occurred at home, half without a birth attendant (Ramarao, 2001). For this reason the intervention must take place at the village and household level.

Near all children in Uttar Pradesh are breastfed and most are breastfed up to two years, however, only half of infants under six months are exclusively breastfed and less than one in ten are breastfed within the first hour of life, with the rest receiving prelactated supplemental feeding (NHIS, 2006).

Women in Uttar Pradesh are less literate and have attended school for fewer years than men, are married at an average age of sixteen years and 42% have experienced either sexual or physical domestic violence. In rural areas these rates are even higher – women are less literate, have attended school for fewer years, are married younger and have experienced even more sexual and/or physical abuse than their urban counterparts (NHIS, 2006).

Mahila Samakhya is a government organization in India, devoted to empowering women through education in order to change women’s image of themselves and change society’s perceptions of the traditional role of women. Out of this program, and the women’s groups that it started, grew other organizations such as Vanangana in Yavatmal which started a program to train women to maintain hand water-pumps and has become a force in battling domestic violence in Uttar Pradesh. By using these established groups of women in local villages we can build onto existing social networks and reduce the necessary start-up work.

BAHEN will primarily be a volunteer organization based out of the University of Pennsylvania (Penn) and will work closely with Baheen to set up an organization in each village to train women to maintain hand water-pumps and has become a force in battling domestic violence in Uttar Pradesh. By using these established groups of women in local villages we can build onto existing social networks and reduce the necessary start-up work.

BAHEN will first meet during a Mahila Samakhya or Vanangana or other women’s group meeting and present information on the benefits of breastfeeding in an encouraging manner. Women can discuss how they are currently breastfeeding and how BAHEN volunteers will praise and encourage participant input in order to foster a space where everyone is safe to speak, without fear of being corrected or shamed. After the initial meeting interested women of any age and status – married or unmarried, grandmothers, mothers, and young girls – will be invited to stay and learn about how to become involved as educators or Didi’s, which is Hindi for big sister. Perks that are involved by being a Didi include awareness about breastfeeding, breastfeeding knowledge about health initiatives that may be traveling? through the village. If village prestige and knowledge are insufficient incentives other perks will be determined as necessary.

The first lesson will build on the introductory discussion about breastfeeding and emphasize the benefits of EEBF for the mother, infant and family. Leaders will also educate Didi’s about proper education methods to minimize participation of infant feedings of intermediation or sham.

Participants will be encouraged to suggest topics for learning at the next meeting and strategies to encourage women to get involved, such as offering a baby contest amongst mothers who are following EEBF guidelines. Following the meeting the Didi’s will be encouraged to disseminate this knowledge into the village, informally amongst family and friends and during formal meetings of the Mahila Samakhya or Vanangan and at schools.

For the second lesson short plays about pregnancy, birth and post-partum hemorrhage and infection can be used to facilitate conversation about what to do in these situations. At subsequent meetings topics such as family planning and contraceptive methods, domestic violence and being able to speak for themselves, health issues, and what to do when someone is sick will be discussed. Women volunteers from Penn’s anthropology department who will contribute cultural expertise and the medical and nursing schools for their background in health. Other potential potential instructors and students and faculty from the School of Business who can contribute knowledge about micro-finance programs for women, and community groups such as Puentes de Salud and the students and faculty from the dental school. Supply drives for materials such as breast-pumps and baby blankets as well as online monetary donations can be facilitated at UPenn. Volunteers will then travel to the chosen village(s) in Uttar Pradesh and live in the community for a minimum of four to eight weeks.

At the end of their stay the volunteers will write a letter to the volunteers about their experience and what they accomplished during their stay, and give the village a summary of what they did and taught.

Co-feeding is recommended by the WHO (2003) as preferential to artificial feeding if maternal breastfeeding is not possible, but local and cultural taboos can be barriers to this practice. Historically, wet-nursing was an average part of feedingosc for the first six months of life and has been accepted and practiced in most societies. This differs from co-feeding which involves a reciprocal relationship between lactating mothers to feed each other’s infants. Wet-nursing fell out of favor but as the benefits of breastfeeding become better understood it slowly became back into favor in the form of co-feeding, as breastfeeding has once again become the feeding method of choice for women in developed nations (Thorley, 2008). Other forms of milk-sharing such as milk-banking have become more common in developed nations and is usually organized by institutions. There is the potential for co-feeding to become culturally acceptable in India.

In Uttar Pradesh the mothers who are co-feeding would ideally have given birth within a week or two of each other, to accommodate the changing needs of infants and the corresponding changing composition of breastmilk. Co-feeding would not begin before one month so the infant could receive the benefits of initial maternal-child bonding and the colostrum. Additionally, participating women would both have to be healthy and free of tobacco, an inflammatory breast infection, cardiac or pulmonary disease, or alcohol and drug addiction. Women would also have to be tested for diseases such as HIV/AIDS, tuberculosis and hepatitis. In Uttar Pradesh HIV/AIDS is virtually non-existent (NHIS, 2006), thereby minimizing the barriers of transmission of these diseases to the infants.

Co-feeding would be presented to the Didi’s who would then disseminate the practice to the community, especially targeting the mothers who will have to return to work. Women would be trained and would then be tested for diseases and educated about refraining from co-feeding if they have mastitis.

After the initial meetings and determination of possible solutions, support will have to be garnered from the
community at large, including from men in the village so they could support their wives. If the information is presented from health professionals and other volunteers from Pen it may have more credibility and therefore be more readily accepted than if it is presented by the Didis. Evaluation will take place among women in their small groups where they will be comfortable sharing their experiences and presenting modifications, as well as at a community level so men can have a voice. For initiatives such as transportation to hospitals and clean water, men’s involvement will be more important than it will be for the co-feeding initiative.

Organization evaluation will actually take place at the end of the first six months and the second six months and thereafter annually. Pen volunteers will have a strong presence for the first year, and the second if necessary, as BAHEN gains acceptance in the community and after that will have a less formal presence as the women take control. Success will be measured substantially from women in the community as they see positive change occurring as well as through analysis of the maternal, infant and child mortality rates, exclusive breastfeeding rates and early breastfeeding rates. Didis will be in charge of measuring these rates every three to six months with the help of Pen volunteers in demographics and statistics courses.

Scaling up the project will occur slowly over time in other rural villages in Uttar Pradesh and perhaps beginning then to branch out to other states in northern India and beyond. Ideally the project will grow organically with word of mouth between women and Didis and can take charge of commissioning projects in other villages.

Conclusion

BAHEN and other projects like it around the world have shown great promise in organizing, educating and empowering women and consequently reducing mortality rates among women, infants and children (Rosato et al. 2008). The Alma-Ata Declaration emphasizing the importance of primary healthcare, was aimed at improving healthcare around the world, and especially for those most in need in developing nations. It requires and promotes maximum community and individual self-reliance and participation in the planning, operation, organization and control of primary health care, making fullest use of local, national and other available resources; and to this end develops through appropriate education the ability of communities to participate (WHO, 1978). Through community health initiatives the goals of this declaration can be realized and can bring about lasting change. Rosato et al. (2008) wisely noted that “maternal and newborn survival and good health are ultimately the result of a society that values women and children.” If women are educated about their rights to healthcare and are empowered enough to demand those rights, their access will improve and their health will improve.

An intervention that supports EEBF, educates women about the benefits of EEBF for themselves, their children and their community and addresses barriers that they face to EEBF can change the culture of breastfeeding and thereby bring about lasting change that can reduce associated morbidity and mortality and improve the lives of families in developing nations.


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