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International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo

IMPROVING REPRODUCTIVE HEALTH

The burden of health associated with benign gynecological disorders in low-resource settings

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ARTICLE INFO

Keywords:

Benign
Gynecology
Menstrual disorders
Pelvic organ prolapse
Quality of life

ABSTRACT

Benign gynecological conditions impact on women's lives in a myriad of ways. Many of these conditions exert their burden on women's health because they remain undiagnosed, unacknowledged, or unreported for many years. Some of these conditions cause debilitating primary symptoms, especially of heavy menstrual bleeding, the lethargy of iron deficiency, and of persistent pelvic pain, with substantial impact on quality of life and ability to function on a day-to-day basis. The distressing quality of life impact of pelvic floor prolapse or of local vulval lesions should not be overlooked. Many also have secondary health consequences with adverse effects on fertility and reproductive outcome.

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1. Introduction

The impact of benign gynecological conditions on both general and reproductive health is largely ignored in many low-resource settings, yet these conditions often determine a woman's likelihood of being infertile, her ability to cope with the daily demands of managing a family, her ability as a sexual partner, her chance of entering pregnancy when anemic, and her ability to cope with complications that may develop during pregnancy. These gynecological conditions are common in all societies, but the pattern of disease varies considerably from one geographical and cultural region to another, although documentation of these in particular communities is often lacking [1].

There may be a very high prevalence of serious reproductive disease in some rural village environments. In a study carried out by the Population Council in 1992–1993, in a sample of 509 parous and nonpregnant women from 2 Egyptian villages, a detailed medical survey found that 56% of these women had genital prolapse, 52% had reproductive tract infections (44% vaginitis, 19% pelvic inflammatory disease), and 11% had abnormal cervical cell changes. Additionally, anemia was present in 63% of the women, while 14% had a urinary tract infection, 18% were hypertensive, and 43% were obese (19% grossly obese). In this community most of the men and women had no schooling [2].

The limited number of early studies of benign reproductive and gynecological disease in rural communities was greatly hindered by the “culture of silence” about reproductive matters [1] and the concept of “secret women's business,” such as exists in many Aboriginal communities [3,4]. Even when studies were carried out by female

physicians already working in the local health centers of many study communities, a high rate of gynecological pelvic examinations was usually not possible [5].

Most of the earlier studies of reproductive disease in rural and low-resource communities have focused on sexually transmitted infections because of the fertility implications and the need for contraception. More recently, an even greater focus on sexual transmission of HIV/AIDS in low-resource communities [6] has diverted attention from the burden of other gynecological conditions in these same communities.

A study undertaken in rural Egypt by the Population Council identified a range of determinants of reproductive morbidity in low-resource settings [2,7]. The conceptual framework developed to account for the multiple individual and sociocultural factors that can impact on a woman's reproductive health is represented in Fig. 1.

2. Definitions

In this paper, the term “benign gynecological disorders” is taken to exclude premalignant forms of endometrial hyperplasia, cervical intra-epithelial neoplasia, and confirmed malignant disease of the reproductive tract. The main symptoms and underlying diseases relevant to this manuscript are summarized in Table 1.

3. The impact of gynecological symptoms

The primary impact of gynecological disease in low-resource settings comes through the occurrence of acute episodes of excessively heavy vaginal bleeding or acute pelvic pain. These symptoms are usually tolerated and coped with until the severity is such that it leads to an inability to carry out daily household tasks or to physical collapse.

In many rural communities, perceived heavy vaginal bleeding or pelvic pain will initially be managed with infusions from herbal mixtures or

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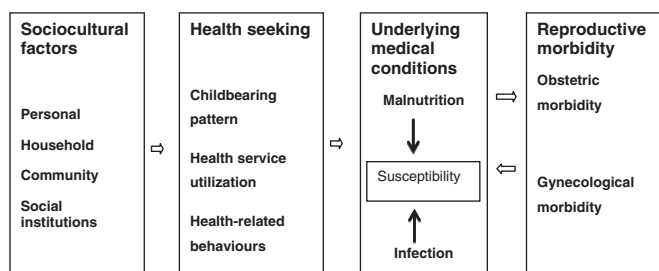


Fig. 1. Determinants of reproductive morbidity (modified from Younis et al. [2]).

physical treatments of the acupuncture type from community healers seen to possess special powers. Many such recipes exist in different cultures. The Chinese Barefoot Doctor's Manual recommends using a combination of 4 plants, including *Gardenia florida* for the treatment of painful periods associated with heavy menstrual flow [8]. In China today, traditional herbal treatments are commonly used to treat the symptoms associated with fibroids [9].

4. Impact of heavy menstrual bleeding

One of the most common gynecological symptoms involves "perceived" heavy menstrual bleeding (HMB). The word "perceived" is used because there are no reliable means of assessing absolute rate and volume of blood loss in these low-resource clinical situations. In many low-resource settings, women appear to tolerate a heavier loss than in high-resource societies because a heavy "red" loss is perceived as a healthy "clean out" of body impurities. This tolerance of heavy bleeding probably accounts for the surprising report that the objectively measured mean for menstrual blood loss (MBL) in a Chinese Community was 56 mL [10] compared with means of 30–35 mL reported in high-resource communities [11]. In high-resource settings, many of these women would, much earlier, have been identified, classified, and treated as being heavy bleeders. The original "norms" from high-resource settings were based on objective menstrual blood loss measurements combined with hematological parameters, with the upper limit of the normal MBL range determined by a significant drop in hemoglobin and serum iron parameters [11]. Objective MBL has not been determined in such a manner in low-resource settings.

In many cultures, HMB is ignored and myths about management persist. South Asian women with heavy periods often avoid the iron-rich foods they most need [12]. Issues of menstruation are considered very personal and secretive and there is great reluctance across many cultures from South Asia to Africa to discuss the problem, even with health professionals [12,13]. As mentioned above, in many low-resource settings, menstruation is widely accepted as having a natural,

cleansing effect, and therefore a heavy loss may be accepted as a mark of well-being, and access to treatment is delayed [14]. These cultural differences, allied with a lack of trained human resources and limited health clinic facilities, mean that most women with heavy vaginal bleeding will defer presentation to a health facility until an episode is "acute and severe." The limited availability of resources means that management is usually limited to an attempt at diagnosis combined with therapy targeted at stopping the acute bleeding—usually some form of curettage. The patient usually needs to be managed at a single visit, since she may have limited possibilities of returning to the clinic because of family duties and distance.

HMB is often associated with a complex of symptoms and the burden of the condition extends into many aspects of women's lives through the practical difficulties of excessive blood loss and having to curb normal social, cultural, and religious activities [15,16]. When neglected, HMB can lead to iron deficiency (with or without anemia) that results in chronic symptoms of fatigue, increased susceptibility to infections, and poor wound healing [17]. These symptoms may occur with iron deficiency on its own, even in the absence of anemia. Anemia exposes reproductive-aged women to an increased chance of complications in pregnancy and labor including preterm birth and postpartum hemorrhage (PPH), and significantly increases the risk of dying in childbirth, especially with PPH [18].

HMB can arise from an imbalance in the clotting and bleeding factors at a local level within the endometrium. Although considered rare in most low-resource settings, inherited coagulopathies, such as von Willebrand Disease, are challenging to manage because of limitations in diagnostic facilities and therapeutic options [19]. High rates of consanguineous marriages can increase the chance of some of the rarer bleeding disorders that can lead to HMB [20].

HMB can also occur with a number of benign gynecological conditions including leiomyomas (fibroids), polyps, and adenomyosis. Around one-third of women with symptomatic fibroids experience abnormal bleeding, most commonly irregular or HMB. Fibroids occur more frequently in women who are nulliparous or overweight, and in African American and Black African women who have larger and more numerous fibroids; as a consequence, they experience more severe symptoms compared with women of other races.

Fibroids are responsible for one-third of all gynecological admissions and are the most common indication for hysterectomy in low-resource settings [21,22]. One of the key factors impacting on the burden of fibroid-associated disease is that until relatively recently, surgery has been the main option for treatment. Furthermore, the modern medical treatments available to women in high-resource countries are not on offer in low-resource settings and thus many women have little choice, particularly if they want to maintain fertility.

Over the past 8 years, FIGO has had a major input into the understanding of many aspects of abnormal uterine bleeding (AUB), but especially HMB, through the establishment of the FIGO Menstrual Disorders Working Group [23].

Table 1

Main symptoms and underlying diseases relevant to benign gynecological disorders.

Symptoms	Benign disorders
Heavy menstrual bleeding (with associated iron deficiency and anemia)	Endometrial molecular pathway disturbances Uterine fibroids (leiomyomas) Endometrial polyps Adenomyosis Endometriosis (coagulopathies)
Pelvic pain	Pelvic inflammatory disease Ectopic pregnancy Endometriosis Uterine fibroids (leiomyomas) Benign ovarian masses "Irritable bowel" symptoms; diverticulitis Interstitial cystitis
Dragging, heavy pelvic sensation, lump in vagina	Uterine and/or vaginal wall prolapse Urinary incontinence Fecal incontinence

5. Impact of chronic pelvic pain

In most low-resource settings, chronic pelvic pain is associated with chronic pelvic inflammatory disease (PID), resulting from a high rate of exposure to sexually transmissible organisms, especially chlamydia and gonorrhea [24–26]. This, in turn, is associated with a high rate of primary and secondary tubal infertility, with a prevalence in some African communities as high as 30% [27–30]. Furthermore, women with a history of PID have 6–10 times the risk of developing an ectopic (tubal) pregnancy compared with women with no history of pelvic infection. Of all ectopic pregnancies, 40%–50% can be attributed to previous PID [31]. Endometriosis is probably more common in these low-resource settings than generally recognized, but data are not available because of the difficulties of diagnosis in these settings.

The key to prevention of these sequelae is recognition of milder, less-recognized presentations of PID, such as irregular or postcoital bleeding and urinary frequency, and treatment that recognizes the polymicrobial nature of many cases. Primary prevention through screening and treatment for chlamydia infection is optimal [32].

Chronic pelvic pain is not treated with a great deal of sympathy in most societies. It is a symptom that cannot be objectively verified, and underlying causes usually require the availability of imaging technology or endoscopic facilities. Management is usually unsatisfactory and individual sufferers need to develop their own coping mechanisms within their own personal environment.

Although chronic PID is the most common cause of severe pelvic pain in low-resource settings, it is likely that undiagnosed endometriosis also plays an important role. For example, general practitioners in Nigeria infrequently refer women for gynecological review and have been found to have limited knowledge of the options for investigation and management of endometriosis [33]. Less common causes of chronic pelvic pain include interstitial cystitis and irritable bowel syndrome. Fibroids can also result in pelvic or back pain, along with abdominal swelling and/or pressure symptoms, especially in low-resource settings where there is late presentation and the fibroid(s) has grown large [22]. The incidence and importance of adenomyosis as a cause, or contributing cause, of pelvic pain in low-resource settings are unknown.

6. Pelvic organ prolapse

Pelvic organ prolapse is very common in parous women and increases with the number of vaginal births. In some women the damage to the pelvic floor that occurs with childbirth also leads to urinary and fecal incontinence. In middle- and low-income countries around 20% of women experience pelvic organ prolapse, one-third experience urinary incontinence, and 7% fecal incontinence [34]. Prolapse development is multifactorial, but the most consistently reported risk factors are (multiple) vaginal childbirth, advancing age, and increased body mass index. Additional factors can include poor nutrition and heavy manual work (Box 1) [35,36].

The symptoms that women commonly experience with prolapse include a dragging heavy sensation, a mass in the vagina, and lower backache. The presence of such prolapsing organs can affect women's sexual lives and impact on their ability to work. Those reporting urinary incontinence frequently experience a multitude of adverse effects on quality of life, including an adverse impact on self-esteem, sexual intercourse, and activities of daily living. The condition imbues women with feelings

Box 1

Risk factors for pelvic organ prolapse.

Established

- Vaginal delivery (especially multiple deliveries)
- Advancing age
- Obesity

Potential risk factors

- Obstetric factors
 - Pregnancy (irrespective of mode of delivery)
 - Forceps delivery
 - Young age at first delivery
 - Prolonged second stage of labor
 - Infant birth weight > 4500 g
- Mother with a history of pelvic organ prolapse
- Poor nutrition
- Work involving heavy lifting
- Constipation
- Connective tissue factors

of shame and embarrassment about the accompanying distressing odor, and leaves them feeling constantly unclean—an even greater problem in low-resource settings than in industrialized countries [35].

7. Impact of other gynecological symptoms

There is limited information on other gynecological symptoms, such as premenstrual “syndrome,” that may be important in low-resource settings. Cyclical menstrual symptoms (such as premenstrual mood symptoms, “the PMS syndrome,” or premenstrual dysphoric disorder [PMDD]) are a significant part of overall benign gynecological morbidity in industrialized countries, but there are few data on the occurrence and impact of such symptoms in low-resource settings. Medical conditions that are exacerbated by or occur in phase with the menstrual cycle vary from the common (premenstrual exacerbation of asthma and menstrual migraine) to the exceptionally rare (catamenial pneumothorax, autoimmune progesterone dermatitis, and cyclical thrombocytopenia). It seems probable that the majority of these conditions are less common in low-resource communities. Management and prevention of these conditions are also highly variable in different cultures; hence, assessment of the burden of health raised in such cultures by these conditions is very difficult to calculate. Nevertheless, even if these conditions are rarely “visible” in such low-resource settings, it does not mean that they are absent. They may be important in terms of efficient functioning for a small number of women in each culture.

Vesicovaginal fistula remains, largely, an overlooked problem in many countries as it affects the most marginalized members of society: young, poor, illiterate women who live in remote areas. The formation of obstetric fistulae is a result of complex interactions of social, biologic, and economic influences [37]. Obstetric fistulae with urinary incontinence are associated with physical and social deprivation, such as exclusion from the family and violent reactions from the woman's husband [38]. These fistulae and the need for a global obstetric fistula training strategy are the subject of a much more detailed article elsewhere in this Supplement [39].

8. The impact of gynecological disorders on reproductive outcome

Many gynecological conditions, if left untreated, can have a significant impact on pregnancy outcomes and on delivery of care to women in low-resource settings [40,41]. Untreated HMB can result in significant anemia. A hemoglobin level below 5 g/dL is associated with an 8 to 10-fold increase in the maternal mortality ratio for women. Maternal anemia also has a significant impact on fetal growth and well-being [18].

Fibroids can impact on pregnancy in a number of ways. They can undergo degeneration as they grow under the influence of pregnancy hormones and cause acute pain. They can also impinge on the uterine cavity and complications repeatedly associated with fibroids include placental previa, malpresentations such as breech, and increased rates of operative delivery and cesarean delivery [41].

Infertility, arising mainly from infection-related tubal causes, results in severe emotional suffering in low-resource settings. Women and men experience diverse social, economic, and personal effects, which go beyond childlessness, and women bear the major burden [42].

9. Summary and conclusions

Certain benign gynecological disorders, such as uterine fibroids, chronic PID, ectopic pregnancy, pelvic floor prolapse, and obstetric fistula are very common in many low-resource settings and contribute substantially to female morbidity and inability to contribute to the family and society. These and other related disorders usually present with excessively heavy menstrual bleeding (or the lethargy that is associated with iron deficiency and anemia) or pelvic pain—two symptoms that may greatly influence women's ability to manage day-to-day life requirements. The provision of health facilities and the training of local health personnel

sufficient to meet these needs in each community is a challenge that faces all government and international aid bodies in low-resource countries currently lacking such a network.

Conflict of interest

Neither of the authors have any conflicts in relation to this manuscript.

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