

A Systematic Review

of the

Health Complications of

Female Genital Mutilation

including Sequelae in Childbirth



FGM

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Geneva



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List of Abbreviations

A	Anecdote
CC	Case control study, a comparative study where the intention is to match and compare two separate groups of patients at the outset of the study
CR	Case report of an individual case, or up to three cases, usually reported from clinical observation
CS	Case series, report of four or more cases, usually reported from clinical observation
CSS	Cross sectional study, observation at one point in time, eg. all women attending an antenatal or gynaecology clinics
CSS/I	Cross sectional study with interview only
FGM	Female genital mutilation
OS	Observational series, report over a period, often from clinical experience, often of attenders, eg. at a gynaecological clinic, often observing a range of outcomes, not just cases of one type which would make up a case series
PC	Personal communication, eg. a report of a midwife reported within a paper
PI	Personal Interview, usually a series of interviews, often in the community

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1. AIM AND OBJECTIVES OF THE SYSTEMATIC REVIEW

The immediate aim of the systematic review is to identify primary data on health complications of FGM, with particular emphasis on sequelae in childbirth, including psychosexual outcomes.

The longer term aim of the systematic review is to use this information for a number of purposes, including identification of outcome measures of complications of FGM for studies to quantify the risk attributable to FGM at each stage in the life cycle; identification of country specific and ethnic group specific outcome measures of FGM that can be used to provide focus to optimise health care provision for care of such complications; and identification of sites world-wide where opportunities exist for research into the health sequelae of FGM.

2. METHODS USED

2.1. Overview of methods

The methods used comprised formulation of a four-step process; developing a search strategy; undertaking a computer search; hand searching key journals; and networking to identify other sources of both unpublished and published information, with a special focus on finding primary research data (see *Figure 1*). For each of the articles located, all relevant references listed were also sought.

2.2. Development of literature search strategy

The literature search strategy involved two main approaches, one to search computerised databases; the other to make contact with organisations and individuals who were likely to know the whereabouts of FGM research material - particularly in grey literature - in local scientific journals or unpublished material.

For the search of computerised databases, two strategies were developed, on female circumcision (see *Figure 2*), and on clitoridectomy/clitorectomy (both spellings yielded papers) and infibulation (see *Figure 3*). Searches were also attempted using a number of keywords related to specific childbirth or psychosexual complications expected with FGM, including vaginal atresia, excision, dyspareunia, fistula, defloration, menstruation or menarche, as well as broader categories such as obstetric complications, marital problems, damage, pain, trauma. Key country names in areas known to have a high prevalence of FGM (including Sudan, Egypt, Ethiopia, Somalia) were also searched.

Figure 1 Summary of procedure for identifying material for the systematic review

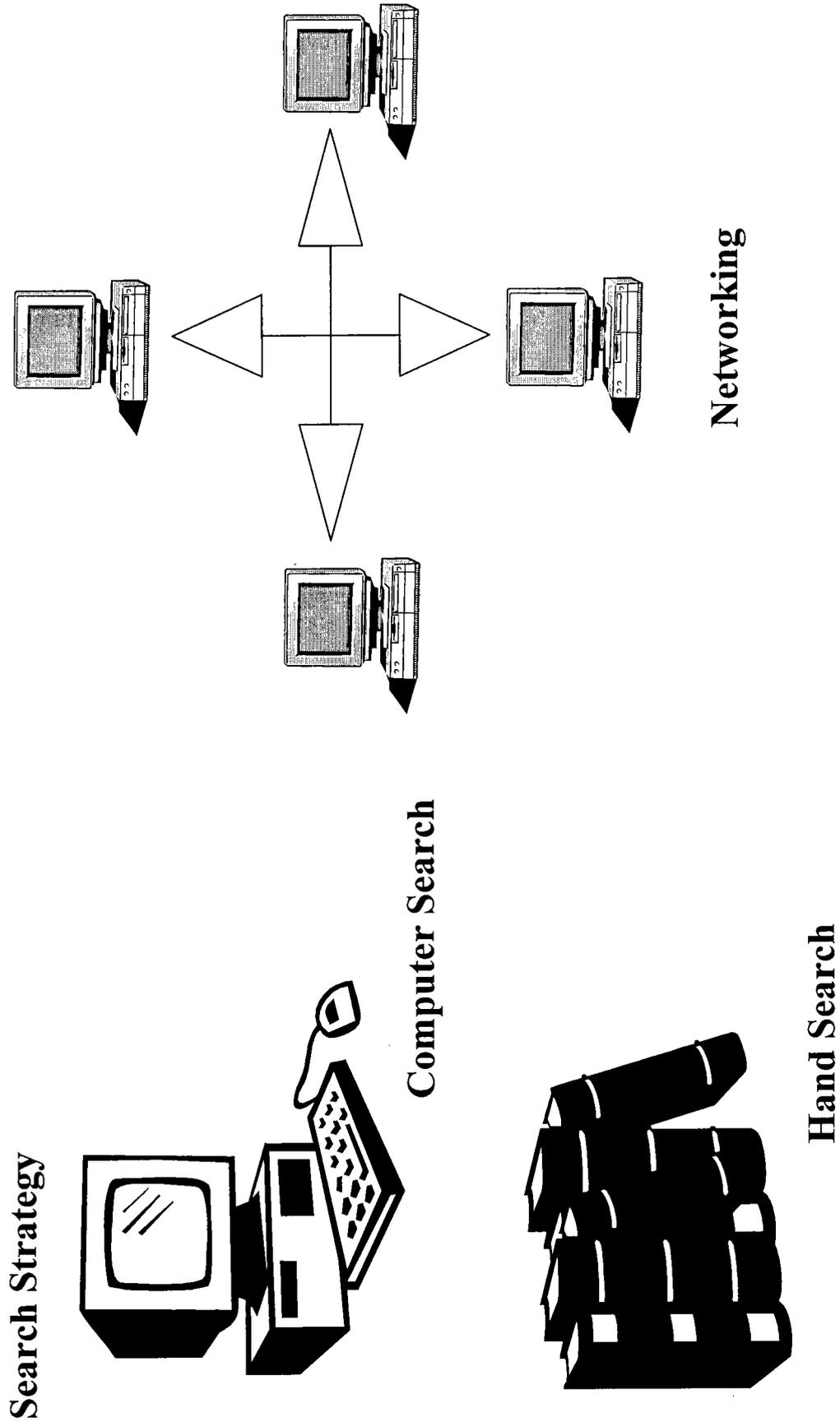


Figure 2 *Search strategy 1 for articles on female circumcision*

No	Request
1	explode "ANTHROPOLOGY, -CULTURAL"/all subheadings
2	"CIRCUMCISION,-FEMALE"/all subheadings
3	CIRCUMCIS
4	GIRL
5	WOMAN
6	WOMEN
7	FEMALE
8	ADOLESCENT
9	CHILD
10	BABY
11	INFANT
12	NEONAT
13	CIRCUMCIS near (GIRL OR WOMAN OR WOMEN OR FEMALE OR ADOLESCENT OR CHILD OR BABY OR INFANT OR NEONAT)
14	MALE
15	#13 not MALE
16	#2 and #15
17	#2 or #15
18	#16

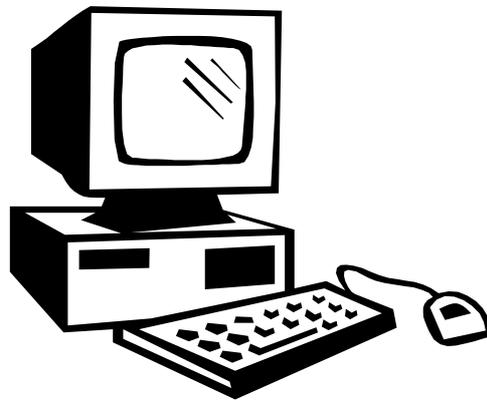
Figure 3 *Search strategy 2 for articles on clitoridectomy and infibulation (also searched as clitorectomy)*

No	Request
1	explode "ANTHROPOLOGY, -CULTURAL"/all subheadings
2	"CIRCUMCISION,-FEMALE"/all subheadings
3	CIRCUMCIS*
4	GIRL
5	WOMAN
6	WOMEN
7	FEMALE
8	ADOLESCENT
9	CHILD
10	BABY
11	INFANT
12	NEONAT*
13	CIRCUMCIS* near (GIRL OR WOMAN OR WOMEN OR FEMALE OR ADOLESCENT OR CHILD OR BABY OR INFANT OR NEONAT*)
14	MALE
15	#13 not MALE
16	#2 and #15
17	#2 or #15
18	#16
19	#16
20	CLITORIDECTOMY
21	INFIBULATION
22	CLITORIDECTOMY or INFIBULATION

2.3. Computer search procedure

Between July 1997 and April 1998, a search of published and unpublished literature was undertaken, using a number of computerised databases. These are shown, with the dates covered in *Figure 4*. PAIS International 1972-April 1997 was also covered.

Figure 4 Summary of computer search



Computer Search

Medline	1966-01/98
Embase	1989-08/97
Cinahl	1982-06/97
Psychlit	1974-03/97
Sociofile	1974-12/96
SIGLE	1980-12/96
CAB Health	1973-03/97

ExtraMed
Popline
AHRTAG/HealthLink

1. English
2. All Languages

2.4. Hand search procedure

All articles identified in the computer search were recorded by the journal in which they were published. Those journals in which a number of articles (of about six or more) on the health complications of FGM had appeared were then identified for hand searching, particularly the period from the start of the journal's publication up to 1966, or whichever year they were included, on a computerised database; and also up to the most recent issue, since female circumcision only become a keyword quite recently.

In addition, those journals which have, or have had, a geographical focus where it is known that FGM was, or is, being extensively practised, and where at least one FGM health complications article had already been identified, have been hand searched. The journals hand searched are listed in *Figure 5*.



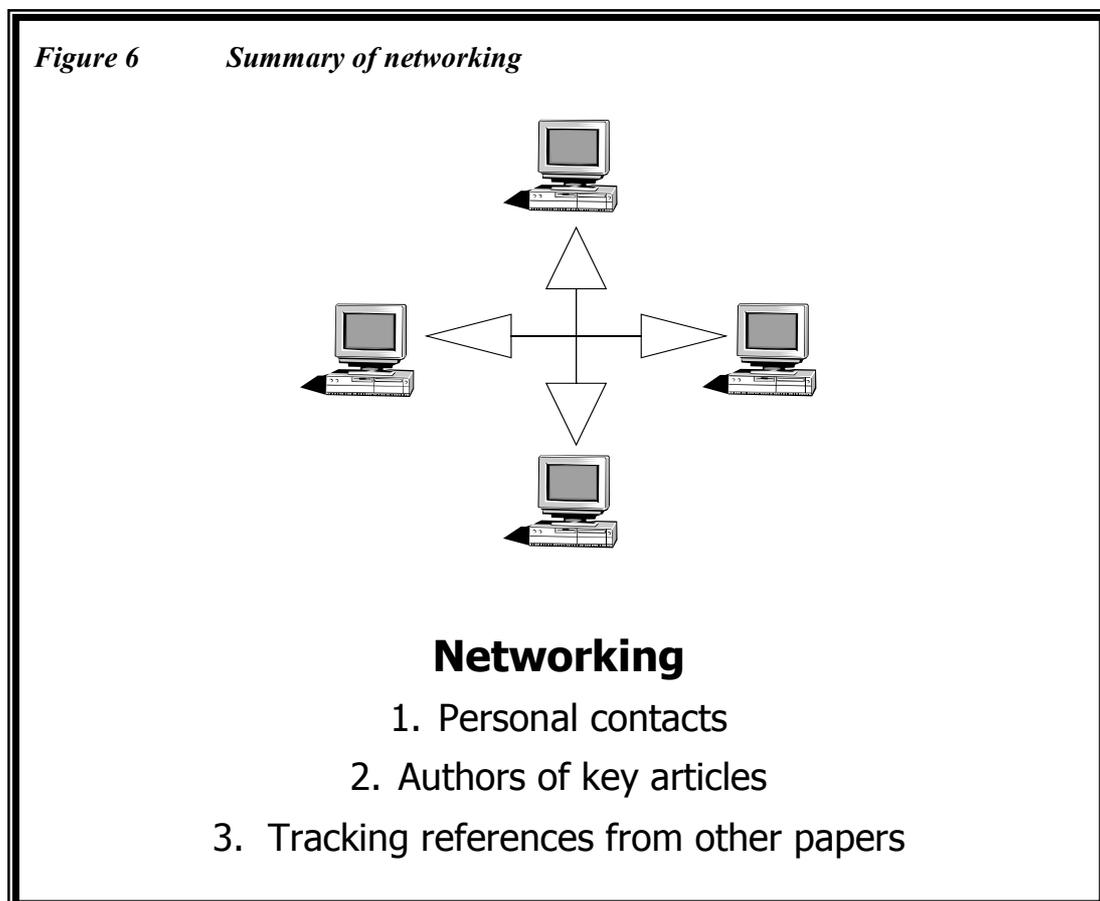
2.5. Networking procedure to identify further primary data

Networking was undertaken through searches of known databases (such as the WHO Women's Health Database and the Safe Motherhood Database); through personal contact with key researchers involved in work on FGM in the AFRO (Regional Office for Africa) and EMRO (Regional Office for the Eastern Mediterranean) regions of WHO; by contacting some authors of key articles; and by tracking references from all the papers identified in the computer search and from elsewhere (see *Figure 6*).

Reviews and books on FGM also provided references to identify studies. In addition, experts, conference participants, and NGOs concerned with FGM were contacted for information. A colleague from Sierra Leone supplied particular information gathered through years of clinical experience of obstetric, gynaecological and psychosexual sequelae of FGM.

Key health workers and researchers developing FGM work were contacted in 13 countries (Egypt, Sudan, UAE, Ethiopia, Tanzania, Kenya, South Africa, Cameroon, Nigeria, Ghana, Burkina Faso, The Gambia, and Senegal). A request was made for country information on published and unpublished primary data on FGM and health complications, either already known to the researcher, or sought through hand-searching local scientific literature, local grey literature or through local personal contact.

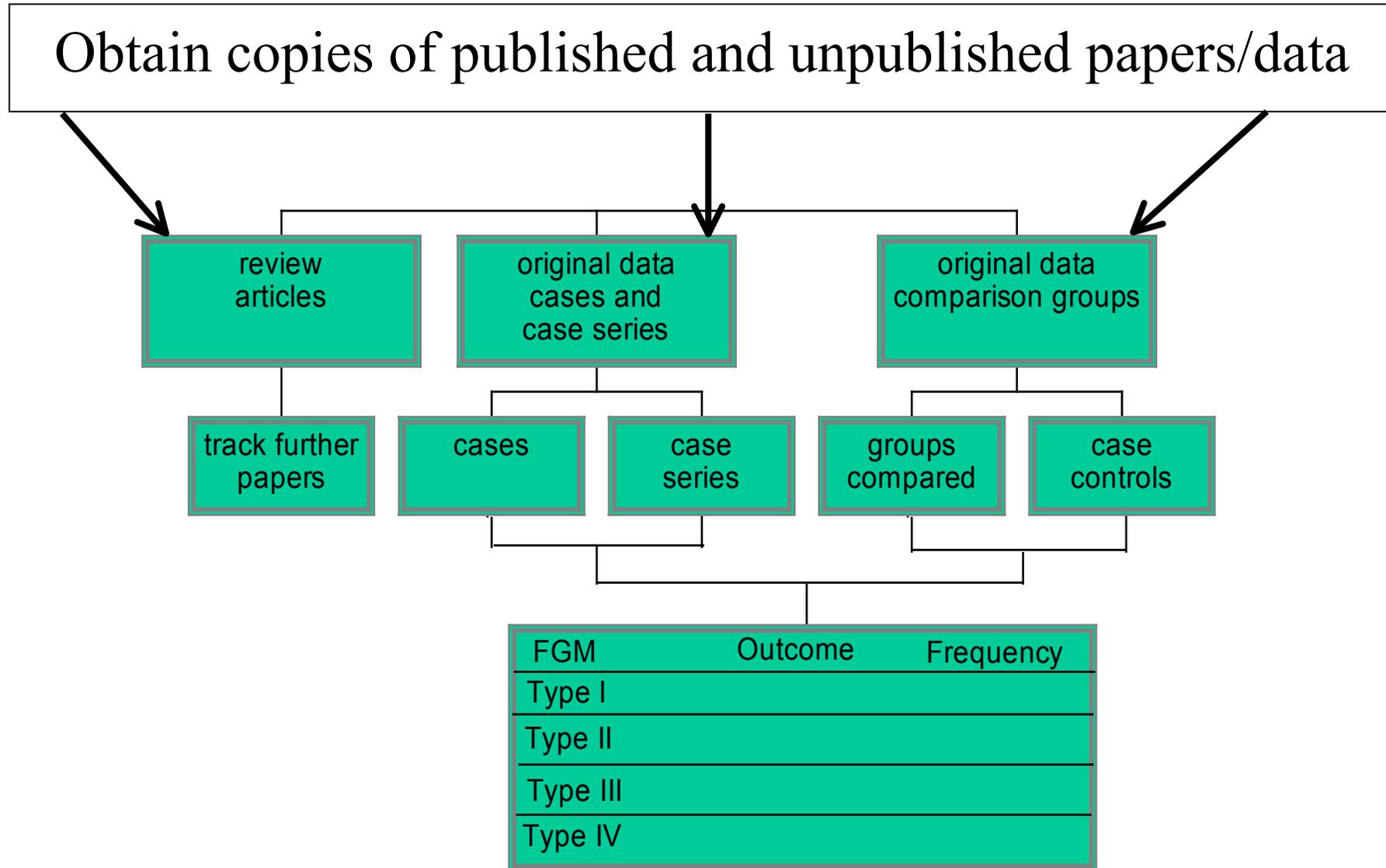
(With regards to the unpublished material, one source not yet systematically searched is the listing of theses presented to higher education institutions.)



2.6 Analysis procedure to separate types of article

Articles were divided into original data, review papers and news. Original data was sub-divided into cases and case series, and comparative studies with groups compared or with cases and controls. Reports of health complications with FGM were also separated, where possible, by the Type of FGM present (see definitions below). A summary of the analysis by types of article is shown in *Figure 7*.

Figure 7 Summary of the analysis by types of article



2.7. Criteria for review and selection of papers to abstract

Studies were included if the data presented was primary data from either a well-structured, comparative study, through the more grey areas of case series, observational series, case reports, observational reports and anecdotes. Papers in any language were considered.

The basic criteria that were used for selection of articles for review and abstracting for the present systematic review were that they should be:

- original articles (or, exceptionally, a review of unpublished/not yet obtained data)
- in any language
- about humans
- about health complications of FGM or topics that are important to the health complications of FGM (e.g. vaginal atresia)

Appendix 1 shows additional criteria used by Best Evidence for selection of papers, but which could not currently be applied to much of the literature found on health sequelae of FGM. These criteria may be useful for designing future FGM studies.

2.8. References for methods used

- Chalmers I, Altman G (1995) Systematic reviews. London: British Medical Journal Publishing Group
- Enkin MW (1996). The need for evidence based obstetrics. *Evidence-Based Medicine* 1(5): 132-133.
- Editorial (1995). Evidence-based Medicine, in its place (editorial). *The Lancet* 346: 785
- Geddes J (1996). On the need for evidence-based psychiatry. *Evidence Based Medicine* 1(7): 199-200.
- Naylor CD (1997). Meta-analysis and the meta-epidemiology of clinical research. *British Medical Journal* 315: 617-619.
- Sackett DL, Rosenberg WC, Muir Grey, JA, Haynes RB, Richardson WS (1996). Evidence based medicine: what it is and what it isn't. *British Medical Journal* 312: 71-72.
- UK, University of York, NHS Centre for Reviews and Dissemination (1995). Review of the research on the effectiveness of health service interventions to reduce variations in health. *CRD Report No 3*.
- UK, University of York, NHS Centre for Reviews and Dissemination (1996). Undertaking systematic reviews of research on effectiveness. CRD Guidelines for those carrying out or commissioning reviews. *CRD Report No 4*. University of York.

3. RESULTS FROM THE SYSTEMATIC REVIEW

The review has been broken down into several key areas:-

3.1. Types of paper found in the FGM and health outcomes literature

Altogether N=422 papers and reports have been identified, excluding news and letters. These comprise:

- Primary data on FGM and health outcomes N= 129 (listed Section 4.1)
(of which N=65 have information on childbirth outcomes)
- Some foreign language material not yet classified as primary data or review N=47 (listed section 4.2)
- Review articles N=131, (listed section 4.3)
- Background, often anthropological material, but without health outcome information N=115 (listed section 4.4.).

3.2. Types of health outcomes found in the FGM papers

- Obstetric - including antenatal, labour, delivery, post partum, pregnancy outcome, maternal mortality and neonatal mortality
- Gynaecological - including menstrual problems
- Psychosexual including infertility problems
- Urinary problems
- Immediate problems following FGM
- Psychological morbidity

3.3. Types of FGM found in the health outcomes literature and the need to compare health outcomes by different types of FGM

All types of FGM were identified in the studies which observed obstetric outcome. It became rapidly apparent that difficulties at delivery due to the presence of a pinhole introitus needed to be separated from other situations. A pinhole introitus present at delivery may present directly due to infibulation (FGM Type III) but can also be found with vaginal atresia due to FGM Type IV (introduction of chemicals or salt to the vagina), or due to unintentional additional vaginal or vulval atresia occurring with additional infection/further scarring from FGM Type I and Type II.

The WHO classification is used for the Types of FGM:

Definition

Female genital mutilation comprises all procedures that involve partial or total removal of the female external genitalia and/or injury to the female genital organs for cultural or any other non-therapeutic reasons.

Classification

- Type I - Excision of the prepuce with or without excision of part or all of the clitoris;
- Type II - Excision of the prepuce and clitoris together with partial or total excision of the labia minora;
- Type III - Excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (infibulation);
- Type IV - Unclassified: Pricking, piercing, or incision of the clitoris and/or labia; Stretching of the clitoris and/or labia; Cauterization by burning of the clitoris and surrounding tissues; Scraping (angurya cuts) of the vaginal orifice or cutting (gishiri cuts) of the vagina; Introduction of corrosive substances into the vagina to cause bleeding or herbs into the vagina with the aim of tightening or narrowing the vagina; Any other procedure that fall under the definition of female genital mutilation given above.

3.4. Narrative review of papers and analysis needed on childbirth sequelae of FGM

A narrative review of individual study results has been prepared to help identify patterns in the data and key characteristics of childbirth complications of FGM.

3.4.1. *Papers identified with primary data on childbirth outcome and FGM*

67 studies, published and unpublished, dating between 1925 and January 1998, with primary data relating to childbirth outcome and FGM, have been identified. These are listed in section 3.4.5. below.

3.4.2. *The need to consider childbirth outcome of FGM performed in pregnancy separately from FGM performed earlier in life*

Reliable interpretation of data on FGM and childbirth outcome requires information on the timing of FGM and the type of FGM performed.

Clearly, the timing of FGM may affect childbirth outcome since FGM performed antenatally may precede labour and delivery by only a few days or weeks, whereas FGM performed on neonates or in childhood will precede labour and delivery by many years.

Thus, FGM timing is divided into two groups for this FGM and childbirth outcome narrative description:

- FGM performed on neonates, on children, at puberty, and before marriage. These are considered together, as the long-term effects on pregnancy outcome do not appear to differ markedly among these groups.
- The obstetric outcome of FGM performed in pregnancy is considered separately.

3.5. Obstetric sequelae of FGM performed earlier in life

It is apparent that the serious obstetric consequences of FGM, when it is performed prior to the index pregnancy, are mainly due to the scarring resulting from FGM. The complications may be severe and directly responsible for maternal and fetal death. FGM Type III, as can be imagined, will cause a direct mechanical barrier to delivery. This is supported by the findings of the review. Twenty-one of the 32 studies which describe prolonged or obstructed labour relate to samples which comprise some, if not all women with FGM Type III. However it is also recognised that FGM Types I, II and IV can produce severe, although perhaps unintentional vulval and vaginal scarring that can act as an obstruction to delivery.

Infection and inflammation at the time that FGM Types I or II are performed may lead to vulval adhesions which effectively narrow or completely obliterate the vaginal opening. Many of these women will never become pregnant but those that do may experience prolonged or obstructed labour (Egwuatu and Agugua 1981). Vaginal inflammation resulting from FGM Type IV in the form of the insertion of herbal pessaries as treatments for gynaecological conditions, or the use of rock salt after previous pregnancies to reduce the vagina to its nulliparous state may result in severe scarring and stenosis (Lister 1960, Underhill 1964).

3.5.1. Antenatal sequelae of FGM performed earlier in life

The reduced vaginal opening affects not only delivery but appears to be the main factor responsible for other obstetric problems caused by FGM - making antenatal assessment, intrapartum vaginal examination or catheterisation difficult or impossible. Inadequate assessments at these times as a result of FGM may compromise mother and fetus physically.

3.5.1.1. Pregnancy in presence of pinhole introitus – identified by eight studies

As has been mentioned previously, pregnancy in the presence of a pinhole introitus differs from other situations, as it represents the most extreme form of scarring, making assessment and delivery impossible without defibulation. Eight studies specifically identified this complication.

Shandall, 1967 (CSS) Sudan over a five year period of observation of 1245 obstetric patients with FGM, in Khartoum, saw five women with pregnancy in the presence of a pinhole introitus, all of whom had undergone FGM Type III.

Modawi, 1974 (CS) Sudan states in a study involving three separate case series that “pregnancy might take place in the absence of penetration and cases were seen in labour with a pinhole introitus”. No frequencies are given. The majority of the women in the series of 3000 had undergone either FGM Type III or a modified form without removal of the labia majora, but still with some narrowing of the vaginal opening.

McCaffery et al, 1995 (CS) UK in a series at Northwick Park Hospital, of African (implies mostly Somali) women with FGM (probably Type III) in 14 primips found, on examination, a pinhole introitus or an introitus which would require defibulation for adequate intrapartum care present in seven cases. In all, in 23 multiparous women the introitus was perceived to be adequate for vaginal examination in labour.

In addition, there are five case reports describing pregnancy in the presence of a pinhole introitus - Worsley, 1938 (CR) Sudan; Laycock, 1950 (CR); Dewhurst et al, 1964 (CR) UK; and Erian, 1995 (CR) UK/Australia. All describe cases of Sudanese women with infibulation, FGM Type III. McCleary, 1994 (CR) Canada, describes a Somali woman with FGM Type III who presented at twelve weeks pregnant with a pinhole introitus, never having had intercourse.

In Summary: There are eight studies which describe pregnancy in the presence of a pinhole introitus. It is apparent that all relate to Sudanese or Somali women, with FGM Type III enumerating at least 19 cases.

3.5.1.2. Fear of labour and delivery due to small size of introitus and need for appropriate obstetric care - identified by five studies

Modawi, 1974 (CS) Sudan in a case series of 3000 women states that the woman approaches labour in “a state of fear”, but no frequencies are given. FGM Types I, II and III are represented in the series.

Shaw, 1985 (CS) USA in a series of interviews with 12 women with FGM (type not stated, probably III) from Sudan, Egypt and Somalia, who had received medical (mainly obstetric) care in the USA, it was found that 100% (12) were worried about painful pelvic examinations, and 90% (11) were worried about tearing of infibulation scar during delivery and incorrect suturing after delivery.

Brown et al, 1989 (CS) Somalia identified six English speaking Somali women in the towns of Mogadishu, Hargeysa and Lefoole with FGM Type III who had already given birth. They all recalled concern regarding the size of the vaginal opening for childbirth and some had tried to limit fetal growth to ease childbirth.

Baker et al, 1993 (CR) USA describes a multiparous Sudanese woman with FGM Type III whose main antenatal concern for delivery in the USA was to receive care from a female knowledgeable about and comfortable with FGM to achieve her aim of a vaginal birth.

Beine et al, 1995 (CS) USA in a series of in-depth interviews with 10 Somali women (a proportion of whom had undergone FGM Type III), who had received antenatal care in the USA, described fear of caesarean section, episiotomy and type of perineal repair as a result of US doctors being unfamiliar with

FGM. The author suggests this may result in under utilisation of antenatal services at term.

In Summary: These five studies describe at least 28 women with fear of labour and delivery. All studies where FGM type is stated include women with FGM Type III. The women are mainly from Sudan and Somalia, but also Egypt; however there is no information on the type of FGM among the Egyptian women.

3.5.1.3. *Difficulty in performing antenatal vaginal examinations - identified by six studies*

Dewhurst et al, 1964 (CR) UK describes a case of a 22 year old Sudanese woman with FGM Type III in whom it was impossible to perform an antenatal vaginal examination before defibulation was performed at 30 weeks gestation.

Shandall, 1967 (CSS) Sudan describes five cases out of 1245 obstetric cases seen over a five-year period, where vaginal examination and urethral catheterisation was difficult due to the presence of FGM Type III. In all five cases, defibulation was required during the 1st stage of labour.

Modawi, 1974 (CS) Sudan in three separate case series, describes cases of pregnancy in the presence of a pinhole introitus, FGM Type III, which would preclude antenatal vaginal examination and make urethral catheterisation difficult. The problem following an early miscarriage is also highlighted. With such cases, there is a high rate of retained products of conception and subsequent severe infection. No frequencies are given.

Karim, ~ 1991 (?OS) Egypt states that during pregnancy there is “difficulty in vaginal examination and monitoring the process of abortion”, although frequencies are not given.

Baker et al, 1993 (CR) USA describes a case report of a multiparous Somali woman seen in the USA with FGM Type III, in whom it was difficult to perform vaginal examinations because of tender vulval scarring.

McCaffery, 1995 (CS) UK nine cases described (all had undergone FGM Type III and it is implied that women were mostly Somali). One case described antenatal vaginal speculum examination as not being possible; in one case peripartum urethral catheterisation was not possible and a further seven cases described the introitus as not being adequate for intrapartum care.

In all of the six studies, the women (from Somalia, Sudan and less conclusively, Egypt) had FGM Type III (where type was stated). At least 20 individual cases are described.

3.5.1.4. Painful scar – identified by one study

Baker et al, 1993 (CR) USA reports a Somali woman with FGM III with tender vulval scarring antenatally.

Table 1 Antenatal complications and complications in early labour

	FGM Type I	FGM Type II	FGM Type III
Pregnancy in presence pinhole introitus			Shandall 1967 (cross sectional study) (Sudan) N = ⁵ / ₁₂₄₅ Modawi 1974 (CS) (Sudan) Number of cases not stated Worsley 1938 (CR) N = 1 Dewhurst 1964 (CR) N = 1 Erian 1995 (CR) N = 1 (all Sudanese women) Laycock 1950 (CR) Somalia N = 1 McCaffrey et al 1995 (CS) N = ⁷ / ₁₄ primips (Somali in the UK)
Antenatal fear of labour and delivery due to small size of introitus and need for appropriate obstetric care			Modawi 1974 (CS) Sudan Number of cases not stated Shaw 1985 (CS) USA N = 12 (100%) Brown et al 1989 (CS) Somali in Mogadiscio N = ⁶ / ₆ Baker et al 1993 (CR) Sudanese in USA N = 1 Beine et al 1995 (CS) Somali in USA Number of cases not stated
Difficulty performing antenatal vaginal examinations due to small introitus and painful vulval scarring, e.g. vaginal speculum examination not possible or peripartum urethral catheterisation not possible			Dewhurst 1964 (CR) Sudanese UK N = 1 Shandall 1967 (CSS) Sudan N = ⁵ / ₁₂₄₅ Modawi 1974 (CS) Sudan Number of cases not stated Karim 1991 (?OS) Egypt Number of cases not stated Baker et al 1993 (CR) Somali in USA N = 1 McCaffrey et al 1995 (CS) N = 9
Painful vulval scarring			Baker et al 1993 (CR) N = 1 Somali in USA
Difficulty assessing progress of labour (or abortion) by vaginal examination			Laycock 1950 (CS) Somalia N = 1 Shandall 1967 (CSS) Sudan N = ⁵ / ₁₂₄₅ Pritchard 1969 (CR) UK/Sudanese N = 3 Aziz 1980 (CS) Sudan Number of cases not stated Karim 1991 (?OS) Egypt Number of cases not stated Baker 1993 (CR) USA Sudanese N = 1 McCaffrey 1995 (CS) UK/Somali N = 1

3.5.2. Labour and delivery

The effects on labour and delivery are considered as sequelae mainly of FGM I, II, and III. Although it is known that FGM IV is performed in nulliparous females in childhood and adolescence for reasons ranging from infertility, amenorrhoea, goitre, backache etc., there appears to be no data on the effects of this earlier FGM IV on subsequent pregnancy. This could be due in part to the fact that FGM IV in nullips causes such severe effects (such as fistulae formation) that marriageability is affected (as well as fertility).

Where possible, both FGM type and parity have been noted to aid interpretation of the study findings. It should also be borne in mind that data have been included from both studies with information on self reported experiences only and those from clinical records and examination. Studies which show statistically significant findings are considered initially in each section.

Where the type of FGM has not been stated it has been assumed, from the type *usually* found in that area. Where the age at which FGM was performed has not been stated it has been assumed, from the age at which it is *usually* performed.

Outcome measures in labour have been considered in a roughly chronological order, as they are likely to appear during labour and delivery.

3.5.2.1. Urine retention in labour - identified by four studies

Shandall, 1967 (CSS) Sudan describes five cases out of 1245 obstetric cases seen over a five-year period, where urethral catheterisation was difficult due to the presence of FGM Type III. In all five cases, defibulation was required so that a urinary catheter could be passed.

Modawi, 1974 (PO) Sudan describes, in what seems to be a personal observation in a case series, the “retention of urine in labour ...fairly common and the passage of a catheter is difficult.” It is unclear whether this statement refers to FGM Type III alone or FGM Types I, II or III, which are all mentioned in the study.

Baker et al, 1993 (CR) USA describes one case in which intrapartum catheterisation was difficult in a Somali woman with FGM Type III.

McCaffery et al, 1995 (CR) UK describes a case where urethral catheterisation at the time of an emergency caesarean section could not be performed prior to defibulation, in a primigravida Somali woman having FGM Type III (with an introitus which would barely admit one finger).

From these four studies, urine retention in labour is, it appears, mainly a problem among women with FGM Type III and the seven cases described relate to Somali or Sudanese women. Modawi 1974 implies many more women may be affected by this problem.

3.5.2.2. Difficulty in assessing progress in labour by vaginal examination – identified by seven studies

It can be assumed that all of the above studies (where there is pregnancy in the presence of a pinhole introitus) would cause difficulty in vaginal examination during labour, particularly those cases that present in labour. Specifically, this complication is described by:

Laycock, 1950 (OS) Somalia describes one woman seen in labour with FGM Type III, with the fetal head well down on the perineum but the introitus having only a very small opening (capable of admitting a single finger).

Shandall, 1967 (CSS) Sudan describes five cases out of 1245 obstetric cases seen over a five-year period, where vaginal examination was difficult due to the presence of FGM Type III, necessitating defibulation in the 1st stage of labour.

Pritchard, 1969 (CR) UK describes three cases of Sudanese women with FGM Type III and states that ‘signs of full dilatation of the cervix are difficult to determine until the head is actually on the perineum causing anal dilatation’ in what are presumed to be personal observations.

Aziz, 1980 (CSS) Sudan states, in a study of 7505 women with FGM Type III, that there is an inability to assess the degree of dilatation in labour, and that defibulation must be performed before pelvic examination can be carried out. The frequency for the need of defibulation in this circumstance is not stated.

Karim, ~ 1991 (?OS) Egypt states, in what is presumed to be personal observations, that with FGM Type III or FGM Type I (excision) that vaginal examinations may be difficult antenatally, during delivery or abortion.

Baker et al, 1993 (CR) USA states that for a Sudanese multip (first vaginal delivery) it was difficult to perform vaginal examinations to assess the stage of labour.

McCaffrey et al, 1995 (CS/CR) UK describes a total of four cases where defibulation was necessary for women with FGM Type III to facilitate vaginal examinations to assess the progress of labour and provide adequate intrapartum care. In summary, the seven studies describe 13 individual women from Somalia or Sudan for whom there was difficulty in assessing progress in labour. Aziz (1980) and Karim (1991) suggest many more cases are seen in clinical practice in Sudan and probably Egypt respectively. All women had FGM Type III, where type of FGM is stated.

3.5.2.3. Prolonged labour and/or obstruction – identified by 29 studies

This appears to be one of the most frequent obstetric outcomes of FGM, identified by 29 studies. The most substantiative evidence for prolonged 2nd stage of labour is provided by:

De Silva, 1989 (CSS) Saudi Arabia in a large study, showed that for 167 Sudanese women with FGM (compared to a control group of 1990 women without FGM) that the duration of the second stage of labour was prolonged for primips at greater than 90 minutes and multips at greater than 60 minutes, with statistical significance at $p < 0.001$. 23 out of 167 women with FGM (14%) had prolonged 2nd stage of labour compared with 86 out of 1990 women without FGM (4%). There was no difference found in the duration of the first stage of labour for the women with FGM and those without FGM. FGM Types I, II and III were represented in the FGM group in this study.

Evidence to support the findings of De Silva will be considered in a hierarchy in the following order; cross sectional studies of outcome, case series, observational studies, case reports, and anecdotes from personal observation providing best evidence. Cross sectional interview studies and personal reports from woman with FGM who have experienced complications are considered next. In these studies it is also recognised that the degree of severity of FGM and parity will influence obstetric outcome.

Shandall, 1967 (CSS), Sudan describes five cases of prolonged labour (all with FGM Type III) in a series of 1245 obstetric patients seen over five years, where the tough obliterated vulva obstructed the fetal head. The author states that FGM Type I does not appear to interfere with childbirth in any way.

El Dareer, 1983 (CSS/I) Sudan in a survey of attitudes to FGM found that 282 of 3210 women would reject FGM because of complications during labour and marriage, and 30 out of the 1545 men interviewed would also reject FGM for these reasons. No further definitions of the complications during labour and marriage are given.

Odujinrin et al, 1989 (CSS) Nigeria in a study involving interview and clinical examination found 27 out of 181 questioned had awareness of FGM causing “difficulties in childbirth” (not further defined). FGM Types I, II, III, are represented in the sample. **Note:** 56% of women in the study claimed to have undergone FGM but 25% showed no evidence of it.

Williams, 1993 (CSS/I) Somalia in a UNESCO survey of 859 women in Lower Juba to investigate understanding of and attitudes to FGM, found that 558 women who cited negative aspects of FGM stated that childbirth and the problems caused by FGM was one of their main concerns. Of the women interviewed, 98% had undergone FGM Type III in childhood.

Philp, 1925 (OS) Kenya in an observational series among the Kikuyu describes prolonged labour as a result of hard perineal scar tissue with FGM Type III, but no frequencies are given.

Anderson, 1929 (OS) Kenya among predominantly Kikuyu who do practice FGM and Kavirondo who do not practice FGM. Describes obstruction in varying degrees corresponding to increased severity of scarring from FGM and parity. "Obstruction from milder forms is slight and unimportant and in multipara negligible." "Milder forms" apparently consist of "excision of clitoris and labia minora" i.e. FGM Type II. Whereas with "more severe types, scarring is formidable". "More severe forms" apparently consist of "anything from a cartilaginous plaque involving the whole of the front of the vulva and urethra to ragged scarred areas involving the pubis and vulva generally" i.e. FGM Type III. The author states that in the Kavirondo ethnic group that does not perform FGM childbirth appears easier, "no doubt connected with the absence of circumcision scars".

Gillan, 1929 (OS) Kenya in an observational series of Kikuyu women with FGM Type II/III, describes that "some obstruction must take place in the majority of first labours since most women are stenosed to a degree, which interferes with the normal elasticity of the parts". The study also states that "closure to a degree so as to seriously interfere with labour" occurs in 10%.

Preston, 1942 (OS/CR) Kenya states FGM among the Kikuyu "causes a certain amount of delayed or obstructed labour but it is generally overcome by an episiotomy". 28 cases of obstructed labour due to the scarring left by FGM are described, but it is argued that these cases are not true obstructed labour because the obstruction can be overcome by episiotomies. The FGM is described as being mainly FGM Type I (clitoridectomy) but severe scarring may occur if too much tissue (labia minora/labia majora) is removed with resultant FGM Type II or Type III which "tends to cause trouble". One case of extensive vulval scarring is described: caesarean section was performed to avoid "severe damage to the genital canal and stillbirth". The other 27 cases were delivered by episiotomy, 16 under general anaesthetic and nine with forceps.

Arthur, 1942 (?OS) Kenya states from previous experience among the Kikuyu that the "most disastrous results occur in primips and labour is always delayed" describing the effects of FGM Type III. No frequencies are given.

Roberts, 1944 (CS), Kenya suggests the major cause of obstructed and prolonged 2nd stage labour in the Native Maternity Hospital, Nairobi, is FGM Type III, with a prevalence of 90% in the area studied, which causes "atresia of the vulva to some extent in all these patients."

Laycock, 1950 (OS) Somalia in an observational series of nine Somali women with FGM Type III, describes two cases of obstructed labour: one due to vulval scarring of FGM, for which defibulation was required for delivery, and one

woman in whom FGM had caused more extensive vaginal scarring, the fetal head being obstructed by a stricture at the upper part of the vagina.

Harris and Angawa, 1951 (CS) Kenya in a series among Kikuyu women with ruptured uterus, seen over a period of three years where FGM Type II is practised in Kiambu, states that “delay or obstruction due to FGM can generally be overcome by episiotomy”.

Lister, 1960 (CS) Nigeria in a series of 320 women with obstructed labour argues that the scarring from FGM seen in the region (probably FGM Type I/II as practised among the Yoruba and Ibo) was never severe enough to cause obstruction and its sequelae. However the article also describes three cases of vaginal stenosis. Two cases of vaginal stenosis were caused by insertion of native herbal pessaries. This is FGM Type IV, the pessaries used as a treatment for sterility, threatened abortion, or to restore menstrual function. Vaginal stenosis is stated to be a cause of obstructed labour and its sequelae.

Renaud et al, 1968 (CR) Ivory Coast in a review of a study by de Salverte, M.A. 1962, describes that the length of the 2nd stage of labour in women with mainly FGM Type I/II (clitoridectomy and cauterisation with a red hot poker) is the same as in women without FGM. However, intervention with an instrumental delivery is reported in the study in all labours where pushing has been going on for more than 30 minutes. Thus the rates of instrumental delivery are stated to be twice as high in those women with FGM than those without FGM. This suggests some degree of delay of the 2nd stage of labour for those women with FGM Types I, II or III. The study specifically states that a higher frequency of uterine inertia in the 1st stage of labour was not noted.

Pritchard, 1969 (CS) UK describes prolonged 2nd stage of labour due to soft tissue dystocia from vulval scarring in three Sudanese women with FGM Type III.

Daw, 1970 (CS) UK in three cases of Sudanese women with FGM Type III, delivering in Sheffield, describes prolonged 2nd stage of labour in two cases, one was a primip the other a multip, both requiring subsequent forceps delivery.

Modawi, 1974 (CS) Sudan in a set of three case series describes “obstruction to labour in the vagina” as “due to stenosis and scarring following circumcision, with delay by rigidity and scarring of the perineum or failure to incise the anterior scar early”. The type of FGM is not stated. In the sample studied women had FGM Types I, II and III. Delay in the 1st stage of labour is said to occur in some as result of “fear reminiscent of her previous circumcision”. Other studies do not concur with this supposition regarding the first stage of labour (de Salverte 1962, De Silva 1989).

Egwuatu and Agugua, 1981 (CS) Nigeria in a case series including 15 adult females in with FGM Type I/II, describes two women who presented for the first time with prolonged labour due to post-circumcision vulval stenosis. Subsequent delivery was aided by generous episiotomy.

Agugua and Egwuatu, 1982 (CS) Nigeria document the complications that presented following FGM Type II over an eight year period of 73 Igbo women and children and found that two women presented with a difficult labour; no further details are given.

Karim, ~ 1991 (?OS) Egypt describes, in what is presumed to be an observational series, how delay in the 2nd stage of labour is encountered when the fetal head presses on the infibulation scar.

Brown et al, 1989 (S) Somalia/Canada in a postal survey of English-speaking Somali women found that only six of 105 respondents had given birth. Of these six, five women reported the length of labour to be 24-73 hours. FGM type not stated; nor parity.

Arbesman et al, 1993 (PI) USA in a series of personal interviews with 10 Somali women found that labour lasted up to two days. The type of FGM relating to this prolonged labour is not stated; nor is parity. FGM Types III, I and no FGM are represented in the sample.

Sheik, 1996 (?OS) a senior nurse midwife suggests in an unpublished memo to WHO that FGM is a cause of prolonged or obstructed labour due to scarring of the perineum leading to reduced elasticity. It is unclear if this information is based solely on a review of the data presented by Abdalla, R. 1982 in "Sisters in Affliction" or also on personal observation from clinical practice.

Philp, 1927 (CR) Kenya reports of a primigravid Kikuyu woman in whom obstructed labour was attributed to vaginal narrowing from FGM. The subsequent vesico-vaginal fistula formation was attributed to the narrowed vagina pulling the bladder down along the vaginal wall. The author suggests that the original FGM is probably Type II/III: "slicing off of external parts and removal of mucous membrane" led to maternal peritonitis and death.

Preston, 1937 (CR) Kenya describes prolonged labour due to keloid scarring in a Kikuyu woman with FGM III.

Surveys of self reporting may be considered as less reliable evidence but still support the findings of other studies:

Abdalla, 1982 (CSI/CR) Somalia describes two cases of multiparous women (para 6); both had had FGM Type III and stated that "labour was always prolonged, lasting up to two days" and that "childbirth was always difficult" with much suffering before and after.

Epelboin et al, 1979 (PC) Mali/East Senegal in a review of FGM cases seen by a midwife from Bamako, Mali, describes obstruction of the vagina by scarring, leading to delay in the 2nd stage of labour necessitating an anterior episiotomy. No frequencies are given. FGM Type II (clitoridectomy) occurs in this region.

Two studies argue that obstruction, delayed labour or difficulties in childbirth due to FGM are **rare**:

Cannon, 1963 (OS) Nigeria in a general obstetric survey among the Yoruba where FGM is practised observes “delay in labour due to soft tissue rigidity is rare although splits in the scar tissue either side of the clitoris are seen”. FGM type not stated but is probably Type I or Type II.

Ebong, 1997 (CSS) Nigeria in a study to assess views on health hazards of FGM showed only 10 of 400 respondents believed FGM, (probably Type II) could prolong labour and cause stillbirth, which seems to illustrate either little awareness among respondents of the effects of FGM on childbirth or a denial of the negative effects.

Overall the obstruction described by these studies relates to soft tissue dystocia. Many cases of such obstruction are described as being easily overcome by episiotomies. The delayed labour relates to the 2nd stage only in all but one study. Only this one study describes effects of FGM on delay in the first stage of labour.

Table 2 Prolonged labour and/or obstruction following FGM earlier in life

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated Study No.
Saudi Arabia (mainly Sudanese) *Comparative study showing statistical significance	*De Silva (CSS) Number not stated relating to each type of FGM 1989	De Silva (CSS) Number not stated relating to each type 1989	De Silva (CSS) Number not stated relating to each type 1989		De Silva (CSS) N = ²³ / ₁₆₇ (FGM Types I, II, III considered as one) 1989
Kenya 1925-1944	Preston (OS/CR) Number not stated 1942	Philp (CR) N = 1 1927 Gillan (OS) 10% No denominator given 1929 Preston (OS/CR) Number not stated 1942	Philp (OS) Number not stated 1925 Anderson (OS) Number not stated 1929 Preston (CR) N = 1 1937 Preston (OS) N = 28 1942 Arthur (OS) Number not stated 1942 Roberts (CS) all (100%) 1994		

Health Complications of FGM

Table 2 Prolonged labour and/or obstruction following FGM earlier in life (cont'd)

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated Study No.
Somalia 1950			Laycock (OS) N = ² / ₉ 1950		
Kenya		Harris et al (CS) Number not stated 1951			
Nigeria				Lister (CS) N = ² / ₃₂₀ 1960	
Sudan			Shandall (CSS) N = ⁵ / ₁₂₄₅ 1967		
UK (Sudanese)			Pritchard (CS) N = 3 1969 Daw (CS) N = ² / ₃ 1970		
Mali/East Senegal	Modawi (CS) Number not stated 1974	Modawi (CS) Number not stated 1974 Epelboin et al (CR) N = 1 1981	Modawi (CS) Number not stated 1974		

Table 2 Prolonged labour and/or obstruction following FGM earlier in life (cont'd)

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated Study No.
Nigeria	Egwuatu et al (CS) N = ² / ₁₅ (total for types I and II) 1981	Egwuatu et al (CS) N = ² / ₁₅ 1981 Agugua et al (CS) N = ² / ₇₃ 1980			
Egypt			Karim (OS) ? Number not stated 1991		
Somalia (Knowledge and attitudes of complications of FGM)			Abdalla (CR) N = 2 1982		
Sudan	El Dareer (CSSI) N = ²⁸² / ₃₂₁₀ 1982	El Dareer (CSSI) N = ²⁸² / ₃₂₁₀ (total for types I, II, III) 1982	El Dareer (CSSI) N = ²⁸² / ₃₂₁₀ 1982		
Somalia					Brown (S) N = 5/6 1989
Nigeria	Odujinrin (CSS) N = ²⁷ / ₁₈₁ 1989	Odujinrin (CSS) N = ²⁷ / ₁₈₁ (total for types I, II, III) 1989	Odujinrin (CSS) N = ²⁷ / ₁₈₁ 1989		

Health Complications of FGM

Table 2 *Prolonged labour and/or obstruction following FGM earlier in life (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated Study No.
USA	Arbesman (PI) Number not stated 1993		Arbesman (PI) Number not stated 1993		
Somalia			Williams (S) N = ⁵⁵⁸ / ₈₅₉ 1993		
Nigeria					Cannon et al (OS) rare (?Type I/II) Ebong (CSSI) N = ¹⁰ / ₄₀₀ (?Type II)

TOTAL: 21 Studies with Primary Data

75 cases observed, specifically described. 6 cases with FGM Type I/II. 41 cases with FGM Type III; further 23 cases with FGM Type I, II and III, 1 case with FGM Type IV.

9 cases of observational or case series where incidence of prolonged labour appears to vary from 10-100%.

7 studies with results of self reporting of either personally experienced complications or knowledge of complication

3.5.2.4. Fetal distress – identified by four studies

The following studies suggest fetal distress is associated with the type of FGM. Berardi et al show no significant effect of FGM II on the neonate and De Silva shows that FGM across a range of types of FGM, including Type III, has a significant effect on neonatal condition.

Berardi et al, 1985 (case control) France a large comparative study involving French speaking Africans with FGM Type II showed no significant difference between the rate of fetal distress in a hospital setting between neonates of mothers with FGM Type II and those neonates of mothers without FGM. The fetal distress was measured by the appearance of prolonged decelerations on the cardiotocograph (CTG) of > 30 beats per minute in either the first or the second stage of labour and the appearance of caput (“bosse serosanguine”) during labour. There were two out of 71 cases of fetal distress in the FGM group (2.8%) and 18 out of 781 cases of fetal distress in the non FGM group (2.3%). Statistical analysis using chi squared showed no significant difference between the two groups in terms of fetal distress.

De Silva, 1989 (CSS) Saudi Arabia showed a significantly higher rate of fetal distress among the neonates of mothers with FGM, (the distribution of types of FGM among the 167 Sudanese patients was: Type I 20/167; Type II 76/167; Type III 71/167) demonstrated by lower Apgar scores at five minutes. nine of the 167 (5%) neonates of mothers with FGM had Apgar scores of less than five at five minutes compared with 48 of the 1990 (2%) neonates from the non FGM group who had Apgar scores of less than five at five minutes. This is significant at $p < 0.05$, statistical analysis using Student’s t - test. For the measurement of Apgar scores the groups of neonates were not subdivided according to whether their mothers had had FGM Type I, II or III which would provide further useful information. There are two reasons which could account for the difference in the results of the studies: i) The different types of FGM studied ii) The different measures of fetal distress used. Apgar scores or fetal blood sampling are the best reflections of neonatal/fetal hypoxia.

The following two studies support the findings of De Silva. In all four cases, fetal distress is occurring with FGM Type III.

Shandall, 1967 (CSS) Sudan describes two cases where instrumental delivery was performed for fetal distress and one where a caesarean section was performed for fetal and maternal distress. No definition of fetal distress given in study. FGM type not stated.

Arbesman, 1993 (CS) USA reports a series of interviews with 10 Somali women over the age of the menarche with FGM Type III. One woman describes a history of possible fetal distress. It is stated that the baby, although it had cried at

birth, had to be “worked on for three hours, but it is now OK” . It is not clear whether this is due to stated “problems with the stomach” or fetal distress because of labour.

In Summary: Fetal distress as a result of FGM earlier in life

De Silva provides strong evidence for FGM (Types I, II and III considered as one) causing fetal distress. Numbers in studies are too small to draw any conclusions on type of FGM and fetal distress.

Overall, there are four studies which specifically mention fetal distress and 14 individual cases of fetal distress described.

Table 3 *Fetal distress as a result of FGM performed earlier in life*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated
France		(CC) Berardi et al N = 2/71 1985 Measured by CTG; caput not significant (compared to non FGM group)			
Saudi Arabia (mostly Sudanese)		De Silva (CSS) N = 9/167 1989 Significant, measured by Apgar scores at 5 minutes			
Sudan					Shandall (CSS) N = 3 cases cited (N = 1245) Measurement of fetal distress not stated
USA (Somali)			Arbesman (CS) ?N = 1 1993		

3.5.2.5. Episiotomies and perineal tears – identified by 41 studies

These are by far the most common complications reported. There is substantial evidence to show that women with FGM suffer more perineal damage as a result of delivery than do those without FGM. This evidence is provided by two comparative studies: Berardi et al 1985 and De Silva, 1989, both of which show statistical significance which is supported by numerous other studies.

Berardi et al, 1985 (case control) France describes a significantly increased episiotomy rate among primips with FGM Type II: eight out of nine (89%) compared to primips without FGM: 123 out of 227 (54%) at $p < 0.001$. There was found to be a significantly increased perineal tear rate in the women with FGM among both primips and multips. Primips: FGM Type II: one out of nine (11%) compared to no FGM: nine out of 227 (3.8%) and multips: FGM Type II: 12 out of 53 (23%) compared to no FGM: 14 out of 471 (3%). Statistical analysis using chi squared showed significance at $p < 0.001$.

De Silva, 1989 (CSS) Saudi Arabia shows a higher rate of posterolateral episiotomy for primips and multips with FGM compared to the women with no FGM: 43 of 43 (100%) primips with FGM had posterolateral episiotomy compared to 325 of 361 (90%) of primips without FGM; 49 of 124 (40%) multips with FGM had posterolateral episiotomies compared with 557 of 1533 (36%) multips without FGM. Significant at $p < 0.05$. Anterior episiotomy (decircumcision) was performed in women 39 of 43 (91%) of primips and 106 of 124 (85%) multips with FGM. Perineal tears were experienced by 11 of 124 (9%) of multips with FGM compared with 14 out of 1533 (1%) multips without FGM; p value not stated. None of the primips with FGM experienced perineal tears presumably because all had had posterior episiotomies and a high proportion had also had anterior episiotomies.

Urethral tears were experienced by two out of 43 (5%) of primips with FGM compared to one out of 361 (0.3%) of primips without FGM. Four out of 124 (3%) of multips with FGM experienced perineal tears compared to none of the multips without FGM. Significant at $p = 0.05$. The findings of increased perineal tears, anterior episiotomies and/or posterolateral episiotomies are supported by 39 other studies. The majority of authors describe FGM Type III as leading to increased perineal damage at delivery.

Over 2000 women with FGM Type III requiring anterior episiotomy or experiencing perineal tears are described. Women with FGM Type I/II appear to experience perineal damage related to the inelasticity of the scar tissue from the FGM, which manifests as splits in the region either side of the clitoris.

Philp, 1925 (CS) Kenya describes the “invariable practice” among Kikuyu primips with FGM III of performing two episiotomies to overcome the hard scar tissue obstructing delivery, which in turn will lead to the formation of even more scar tissue for subsequent pregnancies.

Philp, 1927-28 (CR) Kenya describes a case of a Kikuyu primip with FGM Type III (slicing off of external parts and removal of vaginal mucous membrane) who had been in labour for two days with the vagina stenosed to a degree causing obstruction. The “old woman of the village” had made attempts at cutting (the perineum) to aid delivery.

Anderson, 1929 (OS) Kenya states that primips with FGM Type III (the “more severe form”) where a cartilaginous plaque involves the whole of the front of the vulva and the urethra can only be safely delivered after bilateral posterolateral episiotomies. The difficulty in delivery is probably accounted for “by the rigidity of the vulva.”

Gillan, 1929 (OS) Kenya describes cases of Kikuyu women with FGM Type II, a proportion of such cases complicated by fusion of the raw edges of the vulva. This fusion simulates infibulation. The study implies that birth attendants are aware of the need for episiotomy but may not always recognise the appropriate time to perform one. The author states that if the episiotomy is performed too early, or in a case of obstruction not due to FGM, then avoidable perineal tears and haemorrhage may result. The failure to perform a timely episiotomy is also described and suggested to be responsible for fetal deaths in two cases and a maternal death in one case.

de Villeneuve, 1937 (OS/PI) Somalia/Djibouti a French female anthropologist, conducted interviews with women with FGM Type III. The author describes episiotomy performed at each delivery by the “grandmother” with “the old knife”. It is also stated that “fairly frequent clumsiness” cutting “the flesh wall” (of the vagina) can cut the bladder, resulting in numerous cases of vaginal and urogenital fistula.

Preston, 1937 (CR) Kenya describes a case of severe 3rd degree perineal tears extending to the anus in a Kikuyu woman with FGM Type III and severe keloid vulval scarring with a resultant birth per rectum.

Worsley, 1938 (OS) Sudan describes cases of women with FGM Type III who experienced extensive perineal tears, occurring as a result of unskilled attempts at defibulation at delivery. No frequencies are given.

Arthur, 1942 (?OS) Kenya among Kikuyu women who usually have had FGM Type III, describes the need for extra incisions, i.e. episiotomies, to facilitate delivery especially for primips. No frequencies are given.

Preston, 1942 (OS) Kenya describes a total of 27 cases where episiotomy was required. In 16 cases extensive episiotomy (“distinct from small episiotomies to avoid rupture of the perineum”) under general anaesthesia was required for delivery; nine women required episiotomy and forceps delivery and two women required episiotomy and version (rotation) for delivery. All of these women are Kikuyu with FGM Type I, which may have been complicated by removal of too much tissue thereby leading to more severe scarring and effectively FGM Types II and III. It is also stated that tears of the perineum are considered to be normal because of the vulval scarring due to FGM.

Roberts, 1944 (CS) Kenya describes episiotomy as frequently necessary in women with FGM Type III to overcome delay in the second stage of labour. No frequencies are given.

Laycock, 1950 (OS) Somalia describes the need for anterior episiotomy to deliver fetal head in one woman with FGM Type III and another a woman with a vaginal stricture, stated by the author to be due to FGM Type III, that needed to be incised to facilitate delivery.

Harris and Angawa, 1951 (CS) Kenya in a series of ruptured uterus in Kikuyu women with FGM Type II states that delay or obstruction due to circumcision scarring can generally be overcome by episiotomy. Frequencies are not given.

Preston, 1954 (OS) Kenya from personal experience among Kikuyu women with FGM Type II/III (excision of the clitoris and often the labia minora and sometimes portions of the labia majora) describes perineal tears as uncommon particularly in view of FGM. However the author also reports that primips, especially, suffer appreciable anterior tears in the region of the clitoris scar. No frequencies are given.

Cannon and Hartfield, 1964 (OS) Nigeria states “splits in the scar tissue either side of the clitoris are seen (implying seen regularly) following delivery among the Yoruba, an ethnic group known to practice FGM Type I/II.

Shandall, 1967 (CSS) Sudan Five of 1245 obstetric patients had decircumcision in the first stage of labour. The study also states that all women with FGM Type III require anterior episiotomy. The number of obstetric patients with FGM Type III is not stated. However, if it is assumed that the women who have FGM Type III in the obstetric group are present in the same proportion as in the adult sample group (3013/4204), the number would be approximately 71% of 1245 (i.e. 892 women) requiring anterior episiotomy at delivery.

Renaud et al, 1968 (CR) Ivory Coast in a review of a study by de Salverte, 1962 states that simple perineal tears are twice as common in excised women than in those without FGM. In the sample group studied, FGM Types I and II predominate, about 6% of all those with FGM have FGM Type III. The author reports that when women give birth alone, the perineal damage can

be serious, resulting in 3rd degree tears and anal incontinence; however, 3rd degree tears are stated to be rare because of the frequent use of a large episiotomy in attended deliveries. The overall number of episiotomies is reported to be considerably higher in women with FGM than in those without FGM. Exact increased frequencies are not given.

Pritchard, 1969 (CR) UK describes three cases of Sudanese women with FGM Type III each needing anterior and posterolateral episiotomies. Excessive bruising and perineal laceration are reported as a common occurrence, especially in primips.

Daw, 1970 (CR) UK describes three cases of Sudanese women with FGM Type III, in whom posterolateral episiotomies were performed for “delivery under the hood of fused labia anteriorly”.

Modawi, 1972 (OS) Sudan reports decircumcision, i.e. anterior episiotomy, for women with FGM Type III to be necessary to deliver the fetal head and prevent perineal tears. No frequencies are given.

Pieters, 1972 (CS) Somalia reports that 85 women with mainly FGM Type III required episiotomies, out of a series of 100 births. Those that did not require episiotomy were Indian/Pakistani and therefore probably did not have FGM. In some cases, posterior and anterior were both performed: 11 out of 100 deliveries.

Modawi, 1974 (CS) Sudan describes the need to perform anterior episiotomy so as not to cause delay in the 2nd stage of labour. The author reports that perineal tears are common and sometimes extensive. No frequencies are given.

Silberstein, 1977 (CR) Ivory Coast describes four women with FGM Type II where anterior episiotomy was performed for delivery.

Epelboin et al, 1979 (PC) Mali/East Senegal narrates, within a socioanthropological review, reports from a midwife from Bamako, Mali, who suggests that perineal scarring may lead to slow expulsion of the fetus and the need for anterior episiotomy. The midwife also suggests severe perineal tears occur from the scarring of FGM Type II.

Aziz, 1980 (CSS) Sudan in a study of 7505 women, 99.9% with FGM Type III, reports that “in every circumcised woman the vulva has to be cut to allow delivery of the fetus”. The number of women in the study who had given birth is not stated.

Rwiza, 1980 (CR) Tanzania describes one case of a primigravida (FGM type not stated; probably Type II) where, at delivery, the perineum tore through the old circumcision scar, extending to the urethra, despite episiotomy. The study refers to three other similar cases.

- El Dareer, 1982 (CSS) Sudan** states that defibulation (anterior episiotomy) is performed for all women with FGM Types II/III (intermediate) and FGM Type III (pharaonic) at delivery. In the survey, 1038 cases were identified of women who had undergone defibulation for this reason.
- Shaw, 1985 (PI) USA** describes the results of a series of interviews with 12 women from Somalia, Sudan and Egypt, all with FGM (type not stated), some of whom had experienced perineal tears at delivery which the respondents thought was due to the health care providers in the USA being unfamiliar with FGM at delivery and its appropriate management.
- Brown, 1989 (CSS/I) Somalia/Canada** in a self reported survey of English speaking Somali women in Mogadishu and Lefoole, found that *most* (exact number not given) of the six respondents reported a difficult birth with a large episiotomy. FGM type not stated.
- Hezekiah, 1989 (OS) Kenya** reports that scar tissue had to be cut and the vaginal opening enlarged for delivery, and that lacerations may occur as a result of FGM (type not stated although the sample reported on is known to include some Somali ethnic groups).
- Karim, ~ 1991 (?OS) Egypt** states that urethral tears and perineal scar tissue rupture often occur with FGM Types I and III at delivery. No frequencies are given.
- McSwiney, 1992 (CR) UK** describes the case of a primigravida Somali woman with FGM Type III who was admitted in labour at 39 weeks gestation. A posterior episiotomy was performed to facilitate a forceps delivery. Extensive perineal tears were also sustained with a resultant significant post partum haemorrhage.
- Baker et al, 1993 (CR) USA** describes a case of a Sudanese multiparous woman (1st vaginal delivery, two previous Caesarean sections) who needed an anterior episiotomy to facilitate vaginal delivery.
- McCleary, 1994 (CR) Canada** describes a case of a Somali woman who had FGM Type III and had defibulation by laser vaporisation at 22 weeks gestation. In addition, a posterolateral episiotomy was required at delivery because the vulva had lost its elasticity due to the scarring from the FGM.
- Mawad and Hassanein, 1994 (CS) Sudan** describes all patients presenting with complications of FGM Type III during a three year period. Perineal tears following deliveries (at home mainly) accounted for 80 of 934 (8.5%) cases. Although more difficult to interpret, the study also states that 312 cases of the 934 (33%) presented for repairs of post coital injury or post natal circumcision injury.

Bayoudh et al, 1995 (CSS/I) Somalia from interviews with 70 men and 300 women with FGM Types III (240/300), II (24/300) and I (36/300) report that 10% (i.e. 30 women) required both posterolateral and anterior episiotomies.

Campbell and Abu Sham, 1995 (OS) Sudan in a focus group and observational study of maternal health suggest that, in the Bara district where FGM III prevalence is about 97%, anterolateral, or lateral episiotomy, in addition to decircumcision (anterior episiotomy) is essential for safe childbirth. The study also states that the scarred vulva, due to FGM, may be torn at the time of delivery.

Erian, 1995 (CR) UK describes a case of a Sudanese woman seen in labour in the UK with FGM Type III who required an anterior episiotomy in addition to a “generous” posterior episiotomy for delivery.

McCaffery et al, 1995 (CS) UK in a series of 50 women attending an African well- woman clinic describes 14 primigravida women with FGM Type III who all required episiotomy or sustained perineal tears at the time of delivery. Five of these women required antenatal or intrapartum defibulation, i.e. anterior episiotomy. There were no serious perineal tears recorded. Eleven of the 23 multips delivered with an intact perineum. The author suggests this illustrates that most Somali women are not reinfibulated following childbirth.

Odoi et al, 1997 (CSS) Ghana reports obstetric complications for primips with FGM Type I or II in 20 out of 76 cases in the form of perineal lacerations or haemorrhage. In six of the 76 cases an episiotomy was required at delivery. The study includes a group of women without FGM but the frequencies of the obstetric complications are not stated for this group.

Table 4 *Episiotomies and perineal tears*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
France		Berardi et al (CC) N = 21 1985		
Saudi Arabia	De Silva (CSS) 1989 Results considered as one for FGM Types I, II and III	De Silva (CSS) N = 92 posterolateral episiotomies N = 106 anterior episiotomies N = 11 perineal tears 1989	De Silva (CSS) 1989	
Kenya			Philp (CS) "invariable practice" 1925 Philp (CR) N = 1 1927 Anderson (OS) Number not stated 1929	
Somalia		Gillan (OS) Number not stated 1929	De Villeneuve (OS) "each delivery" 1937	
Sudan			Preston (CR) N = 1 1937	

Table 4 *Episiotomies and perineal tears (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
Kenya			Worsley (OS) Number not stated 1938 Arthur (OS) Number not stated 1942 Preston (OS) N = 27 1942 Roberts (OS) Number not stated 1944	
Somalia			Laycock (OS) N = 2/9 1950	
Kenya	Preston (OS) Number not stated 1954	Harris et al (CS) Number not stated 1951 Preston (OS) Number not stated 1954	Preston (OS) Number not stated 1954	

Table 4 *Episiotomies and perineal tears (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
Nigeria				Cannon et al (OS) Number not stated 1964 (probably Type I/II)
Ivory Coast	De Salverte (CS) 1962 (perineal tears twice as common with FGM I or II)	De Salverte (CS) 1962		
Sudan			Shandall (CSS) 100% N = 7892 1967	
UK/Sudanese			Pritchard (CR) N = 3 1969 Daw (CR) N = 3 1970	
Sudan			Modawi (CS) Number not stated 1972	
Somalia			Pieters (CS) N = 85 1972	
Sudan			Modawi (CS) Number not stated 1974	

Table 4 *Episiotomies and perineal tears (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
Ivory Coast		Silberstein (CR) N = 4 1972		
Mali/East Senegal		Epelboin (OS) Number not stated 1979		
Sudan			Aziz (CS) 100% Denominator not known 1980	
Tanzania				Rwiza et al (CR) N = 1 1980 (probably Type II)
Sudan		El Dareer (CSS) N = 1038 1980 (All women with FGM Type III or intermediate FGM i.e. Type I/II)	El Dareer (CSS) N = 1038 1980 (All women with FGM Type III or intermediate FGM i.e. Type I/II)	
USA				Shaw E. (PI) "some" of 12 1985
Somalia				Brown (CSSI) "most" of 6 1989

Table 4 *Episiotomies and perineal tears (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
Kenya/Somalia				Hezekiah (OS) Number not stated 1989
Egypt	Karim (OS) "often" 1991		Karim (OS) "often" 1991	
UK			McSwiney (CR) N = 1 1992	
USA/Sudanese			Baker (CR) N = 1 1993	
Canada/Somali			McCleary (CR) N = 1 1994	
Sudan			Mawad et al (CS) N = 80 1994	

Table 4 *Episiotomies and perineal tears (cont'd)*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not Stated
Somalia		Bayoudh et al (OS) N = ³⁰ / ₃₀₀ 1995	Bayoudh et al (OS) N = ³⁰ / ₃₀₀ 1995	
Sudan			Campbell et al (OS) "essential in 97% of the population" 1995	
UK/Sudanese			Erian (CR) N = 1 1995	
UK			McCaffery (CS) N = ²⁶ / ₅₀	
Ghana	Odoi et al (CSS) N = ²⁰ / ₇₆ 1997	Odoi et al (CSS) N = ²⁰ / ₇₆ 1997		

3.5.2.6. Pain during and after decircumcision (anterior episiotomy) for delivery – identified by four studies

Anterior episiotomy is usually only necessary for women with infibulation i.e. FGM Type III. The pain of anterior episiotomy is specifically mentioned in four studies:

Shandall, 1967 (CSS) Sudan describes that anterior episiotomy is always necessary in women with FGM Type III. The study also states that pain from the anterior episiotomy may result in “secondary inertia”, taken to mean reluctance to push in the second stage of labour. It is reported that the women also experienced increased pain at the time of repair of the anterior episiotomy. If the proportion with FGM Type III is accepted to be the same in the obstetric patients as that in the overall sample, this would account for 892 women experiencing further pain as result of anterior episiotomy.

Abdalla, 1982 (CSS/I) Somalia describes a case report of a multiparous woman with FGM Type III who states that much suffering was always experienced before and after childbirth.

Pritchard, 1969 (CR) UK describes three cases of Sudanese women with FGM Type III where the post natal pain from perineal wounds (both anterior and posterolateral episiotomies) was judged to be exaggerated above that normally expected.

Baker, 1993 (CR) USA in a case report of a Sudanese woman with FGM Type III described the need for adequate analgesia before vaginal examination or anterior episiotomy could be performed.

Table 5 *Pain during and after decircumcision (anterior episiotomy) following FGM to enable delivery to take place*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.
Sudan			Shandall (CSS) "Always pain" ? N=892 1967
Somalia			Abdalla (CR) N=1 1982
UK (Sudanese)			Pritchard (CR) N=3 1969
USA (Somali)			Baker et al (CR) N=1 1993

In Summary: Pain due to decircumcision to enable delivery to take place following FGM earlier in life

Analysis of the results of this section and the previous section on episiotomy show that anterior episiotomy is a frequent and considered to be an essential part of intrapartum care for women with FGM Type III, and also those women who originally had what would be defined as FGM Types I or II but with secondary complications of vulval adhesions, thereby closing the introitus.

Any extra perineal cuts incur further pain both at the time when they are performed and also in the postnatal period.

There are four studies that specifically describe the pain suffered by these women, all of whom had FGM Type III; these number from five to 897 individual cases (the latter figure if comments by Shandall are extrapolated to this whole sample).

3.5.2.7. Post Partum Haemorrhage- identified by 32 studies

Most studies describe haemorrhage following delivery in women with FGM Type III occurring from vaginal lacerations. The following study provides the most convincing evidence that FGM leads to a higher incidence of post partum haemorrhage.

De Silva, 1989 (CSS) Saudi Arabia The incidence of post partum haemorrhage is much higher in the FGM group (multips and primips; FGM Types I, II and III) compared to the non FGM group, with 9/167 (5.4%) versus 31/1990 (1.6%) respectively. Using Students t – test, this is significant at $p < 0.001$.

The following studies support the findings of De Silva:

Preston, 1937 (CR) Kenya describes the case of a Kikuyu woman who suffered an obstructed labour, stated by the author to be due to severe scarring as a result of FGM Type III, and post partum haemorrhage following delivery of the placenta, which caused the patient to faint.

Shandall, 1967 (CSS) Sudan states that more blood loss from the incisions (episiotomies) at delivery occurs with women with FGM, type not specified. No frequencies are given.

Modawi, 1972 (OS) Sudan cites that “many cases” of post partum haemorrhage from genital wounds (“left unsutured because of decircumcision in the presence of infection”) are seen following delivery of Sudanese women with FGM Type II or Type III. Exact frequencies are not given.

Rwiza, 1980 (CR) Tanzania describes a case of a woman from the Pare tribe with FGM (type not stated; probably Type II) who had a severe post partum haemorrhage from vulval tears.

McSwiney, 1992 (CR) UK describes a Somali primip in Bristol who suffered an estimated 6 litre blood loss from vaginal and perineal tears sustained following delivery in the presence of FGM Type III. The woman also required a period of intensive care for 24 hours and a transfusion of five units of fresh frozen plasma, 7 units of blood and 2.5 litres of gelatin colloid.

Odoi, 1997 (CSS) Ghana describes 20 out of 76 primips with FGM Type I or Type II as having obstetric complications in terms of lacerations or haemorrhage.

In Summary: De Silva 1989 provides strong evidence that FGM leads to a higher incidence of postpartum haemorrhage. This finding is supported by a further six studies. In total 32 cases are specifically described. Modawi 1972 suggests from clinical experience that many more cases occur.

Table 6 Post Partum Haemorrhage (PPH) in the presence of FGM performed earlier in life

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type IV Study No.	FGM Type Not Stated Study No.
Saudi Arabia (mostly Sudanese)	De Silva (CSS) PPH 1989 in $\frac{9}{167}$ significant at $P < 0.001$				
Kenya			Preston (CR) N=1 1937		
Sudan		Modawi (OS) "many" 1972			Shandall (CSS) Number not stated 1967
Tanzania					Rwiza (CR) N=1 woman from Pare tribe 1980
UK			McSwiney (CR) N=1 1992		
Ghana	Odoi (CSS) N= $\frac{20}{76}$ 1997				

In Summary: Postpartum haemorrhage in the presence of FGM earlier in life

Post partum haemorrhage is shown to be significantly more common among women with FGM Types I, II or III by De Silva, 1989. Most commonly the cause for the increased haemorrhage is from the extra incisions made and perineal tears experienced as a result of the scarring from FGM. There are seven studies which describe PPH as an obstetric complication of FGM.

From the table it can be seen that other studies report PPH as occurring as a result of all Types of FGM (I, II and III) which supports the De Silva study. Overall, 32 individual cases are described. The findings of Modawi 1972 and Shandall 1967 suggest there are many cases of PPH in the presence of FGM although these are not quantified.

3.5.2.8. Maternal death following FGM performed earlier in life – identified by seven studies

Seven studies describe maternal death as a complication attributable to FGM:

Philp, 1927 (CR) Kenya describes a Kikuyu woman with FGM (slicing off of the external parts and removal of vaginal mucous membrane, interpreted as FGM Type II or III) who developed peritonitis and died following fistula formation during a prolonged labour. The author attributes the prolonged labour and therefore the maternal death to the presence of FGM.

Gillan, 1929 (OS) Kenya states that labour is prolonged due to FGM Type II or Type III and attributes maternal death in one case to “the long ordeal” of labour where appropriate episiotomies were delayed.

de Villeneuve, 1937 (OS) Somali/Djibouti states that “puerperal fever at childbirth can lead to maternal death” and that death in childbirth is not rare. Although clearly puerperal sepsis cannot be attributed to FGM Type III in isolation, the statement that for each in pregnancy “a cut is needed” implies a high episiotomy rate with a concomitant risk of perineal infection and sepsis.

Arthur, 1942 (?OS) Kenya states, in what is thought to be a result of personal observations of Kikuyu women, that “the most disastrous results occur at the time of childbirth” and that “the mother often dies” due to prolonged labour caused by FGM Type III. No frequencies are given.

Laycock, 1950 (OS) Somalia states that “undoubtedly many mothers die in childbirth because normal delivery is impossible” due to the obstruction caused by scarring of FGM Type III. No frequencies are given.

Hassan, 1995 (CR) Sudan describes a case of a woman with FGM Type III who developed a post natal tetanus infection in the episiotomy wound and subsequently died.

Campbell, 1995 (CS) Sudan reports that the Bara district has a prevalence of 97% of FGM Type III and a very high rate of maternal mortality. The report states that in addition to causes of this high rate of mortality and morbidity experienced throughout the developing world, FGM is a contributory factor. The authors acknowledge that there can be no causal relationship drawn from the results.

Table 7 *Maternal death postpartum attributed to FGM performed earlier in life*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.
Kenya		Philp (CR) N = 1 case ?Type II/III Kikuyu 1927	Philp (CR) N = 1 case ?Type II/III Kikuyu 1927
		Gillan (OS) N = 1 case 1929	
Somalia			De Villeneuve (OS) Number not stated ?FGM a contributory factor 1937
Kenya			Arthur (OS) Number not stated 1942
Somalia			Laycock (OS) Number not stated 1950
Sudan			Hassan (CR) N = 1 1995 Campbell (OS) ?FGM a contributory factor 1995

In Summary: Maternal death following FGM performed earlier in life

Seven studies describe FGM as either a contributory or causal factor in maternal death following FGM earlier in life. Most cases appear to describe unattended or inappropriately treated obstructed labour caused by the vulval scarring from FGM Type III. It is not clear from the descriptions given by Gillan 1929 and Philp 1927 whether the FGM Type is Type II or III; infibulation does not appear to have been the aim of the original FGM, but the resultant scarring has provided the same obstruction to delivery and subsequent maternal death.

Overall there are three maternal deaths attributed to FGM. The observational studies (no frequencies are stated) suggest that many more may occur, or suggest that FGM is a significant contributory factor in many maternal deaths.

3.5.2.9. Fetal death (stillbirth and neonatal death) – identified by 10 studies

There are 10 studies that describe stillbirth or neonatal death as a complication of FGM:

De Silva, 1989 (CSS) found the stillbirth and early neonatal death rate for the FGM group as four of 167 (2.4%) compared to 31/1990 (1.6%) in the group without FGM; p value is not stated.

Philp, 1925 (CS) Kenya describes neonatal death and stillbirth resulting from prolonged labour due to the scarring of FGM Type III as contributing to a large part of the infant mortality rate. Frequencies are not given.

Philp, 1927 (CR) Kenya describes a case of stillbirth where obstruction was stated to be caused by vaginal narrowing resulting from previous FGM (Type II/III) and attempts at vaginal cutting by an untrained attendant.

Gillan, 1929 (OS) Kenya describes two cases of stillbirth attributed to obstruction of labour by perineal scarring caused by FGM Types II or III.

Anderson, 1929 (CS) Kenya states that the obstetric complications in primips due to FGM Type II and Type III “play an important part in the death rate of the first born.” No frequencies are given.

Preston, 1937 (CR) Kenya reports a case of a Kikuyu woman with FGM Type III with severe keloid scarring which resulted in prolonged labour and a stillbirth.

Arthur, 1942 (?OS) Kenya from probable personal observation states that “the child often dies” due to the unfavourable conditions created in labour by FGM Type III.

Laycock, 1950 (OS) Somalia describes a case of a stillbirth resulting from obstructed labour caused by vaginal stricture stated to be due to FGM Type III.

Brown, 1989 (S) Somalia reports two neonatal deaths out of a total of six births among respondents of a postal survey of English speaking Somali women in Mogadishu who had FGM (type not stated).

Arbesman et al 1993 (CS) USA as a result of interviews with 10 Somali women with FGM Types III and I reports that one woman had experienced a neonatal death on day 1.

Table 8 *Fetal death (still birth and early neonatal death) as sequel of FGM performed earlier in life*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type Not stated Study No.
Saudi Arabia (mostly Sudanese)		De Silva (CSS) 4/167 2.4% FGM + 1.6% FGM - NND + SB 1989		
Kenya			Philp (CS) "large part of infant mortality" 1925	
			Philp (CR) N=1 SB 1927	
			Gillan (OS) N=2 SB 1929	
			Anderson (CS) 1929 Nos. not stated SB/NND not stated	
			Preston (CR) 1937 N=1 SB NND+SB	
			Arthur (?OS) "the child often dies" 1942	
Somalia			Laycock (OS) 1950 N=1 SB	Brown (S) 1989 postal survey N=2NND
USA/Somalia				Arbesman (CS) N=1NND day 1 1993

In Summary: Fetal death (stillbirth and early neonatal death) as a sequela of FGM performed earlier in life

There are ten studies, four of which relate to still birth alone (four cases) and two which relate to neonatal deaths (three cases). De Silva found a higher combined still birth and early neonatal death rate among the FGM mothers than non FGM mothers. A total of 11 fetal deaths are described by the reports. The observational and case series do not give frequencies but state simply that many more deaths occur in the presence of FGM.

Almost all cases appear to be related to the obstruction to delivery posed by the vulval scarring of FGM Type III or the extra scarring in complicated FGM Type I or II.

3.5.2.10. *Post - partum genital wound infection following FGM performed earlier in life*

Anderson, 1929 (CS) Kenya describes approximately 42 of 200 women (134 of whom had FGM Types II or III) who developed post partum sepsis as a result of infection of perineal tears and incisions for decircumcision.

Shandall, 1967 (CSS) Sudan describes 40 out of 100 cases admitted to the isolation ward with puerperal sepsis as resulting from infected circumcision scars. 12% of parous patients with FGM Type III gave a definite history of post - partum wound infection compared to 5% of those with FGM Type I. The number of parous women in the study is not stated.

Modawi, 1972 (OS) Sudan states that infection of genital wounds may occur following decircumcision for delivery of women with FGM Type II or III. No frequencies are given.

Modawi, 1974 (CS) Sudan describes four cases of infected episiotomy with delayed healing in women with FGM; type not stated.

Mawad et al, 1994 (CS) Sudan states that post-partum wound infection occurs as a result of FGM Type III but no frequencies are given.

Campbell et al, 1995 (CS) Sudan describes puerperal infection occurring as a consequence of FGM Type III but no frequencies are given.

Hassan, 1995 (CR) Sudan describes a woman with FGM Type III who developed a subsequent tetanus infection from the genital wound incurred at delivery.

Table 9 *Postnatal genital wound infection as a complication of FGM performed earlier in life*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type not stated Study No.
Kenya			Anderson (CS) N=42/200 1929	
Somalia			De Villeneuve (OS/I) Number not stated 1937	
Sudan	Shandall (CSS) 5% 1967		Campbell et al (OS) Contributory factor 1995 Hassan (CR) N= 1 death Tetanus septicaemia 1995 Modawi (OS) Number not stated 1972 Shandall (CSS) 12% 1967 Mawad et al (CS) Number not stated 1994	Modawi (CS) N= 4 1974 Shandall (CSS) N = 40 1967
USA/Somalia				Arbesman (CS) N = INND day 1993

In Summary: Post natal genital wound infection as a complication of FGM performed earlier in life

Seven studies identified postnatal genital wound infection as a complication of FGM. The table shows this complication relates mainly to FGM Type III and Shandall 1967 shows that the rates of infection are higher with the wound from FGM Type III compared to the wound from FGM Type I.

In total, 87 cases of postnatal wound sepsis are described. The observational series by Mawad et al 1994 and Modawi 1972 suggest there are many more cases. Campbell et al 1995 suggests FGM is a contributory factor to puerperal infection as does de Villeneuve 1937.

3.5.2.11. Fistulae formations as a result of FGM

Philp, 1927 (CR) Kenya attributes vesico-vaginal fistula formation to FGM (in one case of a Kikuyu woman with FGM Type III) which was thought to have caused bladder adhesions, distorted the anatomical position of the bladder and made it more susceptible to damage during prolonged labour caused by the scarring of FGM.

de Villeneuve, 1937 (OS) Somalia/Djibouti describes, among women with FGM Type III, instances where clumsiness cutting the “flesh wall” at delivery can cut the bladder, resulting in numerous cases of vaginal and urogenital fistula.

Preston, 1937 (CR) Kenya describes a case of birth per rectum causing a recto-vaginal fistula and attributes it to the hard scar tissue of FGM Type III acting as an obstruction to vaginal delivery.

Shandall, 1967 (CS) Sudan describes splitting of the urethra during anterior episiotomy for FGM Type III at delivery, leading to urethro-vaginal fistula in one case.

Damas, 1972 (CS) Burkina Faso in a series describing vesico-vaginal fistulas (VVF) states that “scar tissue dominates the clinical picture”, suggesting that FGM is important in association with VVF.

Pieters 1972 (CS) Somalia in describing a case series of 14 women with fistulae, states that in women with FGM (probably Type III), fistulae result from “clumsy use of the little knife at birth”

Muhammed, 1996 (CS) Tanzania states that “the type of FGM (Types II and III) seen in Dodoma is **not** a contributory factor in the genesis of obstetric fistula.”

Table 10 *Fistulae formation as a result of FGM*

Country	FGM Type I Study No.	FGM Type II Study No.	FGM Type III Study No.	FGM Type not stated Study No.
Kenya			Philp (CR) N = 1 Obstruction by scarring 1927	
Somalia			De Villeneuve (OS) "numerous cases" Accident of episiotomies 1937	
Kenya			Preston (CR) N = 1 Obstruction by scarring 1937	
Sudan			Shandall (CSS) N = 1 Accident of anterior episiotomies	
Burkina Faso				Damas (OS) Type not stated No frequencies given 1972
Somalia			Pieters (CS) Number not stated Accident at episiotomy 1972	
Tanzania			Muhammed (CS) "not a contributory factor" 1996	

In Summary: Seven studies identify fistulae as a possible obstetric complication of FGM; mainly Type III. Overall there are three cases attributed directly to FGM Type III. In two of these cases, fistulae formation is attributed to obstruction of labour by vulval scarring with the distortion of anatomy caused by FGM Type III also acting as a contributory factor. An observational series by Damas 1972 supports these findings. There is one case where fistula resulted from an accident with the anterior episiotomy (Shandall 1967). Two observational series by de Villeneuve 1937 and Pieters 1972 support "accident at the time of anterior episiotomy" as a cause of fistulae.

3.6. Childbirth sequelae of FGM performed in pregnancy

Nine primary studies on obstetric sequelae of FGM in pregnancy have been identified.

FGM in pregnancy is known to be practised in Nigeria and timing varies with region and ethnic group. The Igbomina - Ekiti, of Kwara State, and some ethnic groups of Delta state perform FGM Type II in the third trimester of pregnancy while the Ogbaru of Anambra state perform FGM in the first trimester of the first pregnancy (Adetoro and Ebomoyi 1986).

Two types of FGM (II and IV) are reported to be performed during pregnancy. FGM Type II seems to be the type usually performed in pregnancy but some studies do not describe the FGM in sufficient detail to define its type. FGM Type IV occurs in pregnancy as gishiri cuts in pregnancy reported amongst the Hausa, Fulani and Kanuri as treatment for obstructed labour (Harrison, 1983, Tahzib 1985); also as insertion of herbal vaginal suppositories in the Ibadan region of Nigeria to attempt to procure an abortion (Adelusi, 1975).

The practice of performing FGM in pregnancy appears to be country-specific to Nigeria, although there have been reports of cuts made into vaginal walls in an attempt to treat obstructed labour (gishiri cuts) in Kenya, amongst the Kikuyu (Philp, 1927, CR) and Somalia (Brotmacher, 1955, OS). In Nigeria, the practice of FGM in pregnancy (usually as FGM Type II) appears to be firmly associated with the health belief that if the clitoris touches the infant's head during birth the baby will die. Gishiri cuts (FGM Type IV) into the vaginal wall are performed for a variety of reasons but in pregnancy it is generally as a treatment for obstructed labour.

3.6.1. Antenatal sequelae of FGM performed in pregnancy

<i>3.6.1.1. Haemorrhage antenatally at site of FGM immediately after FGM in pregnancy – identified by three studies</i>
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Adetoro et al, 1986 (CR) Nigeria reports a woman who required a blood transfusion of two units of blood on admission to hospital as a result of bleeding at the time of FGM Type II (performed in the third trimester of pregnancy.)

Harrison, 1983 (A) Nigeria reports anecdotally, in a review of vesico-vaginal fistulae, that FGM Type IV (gishiri cuts) used as treatment for obstructed labour in northern Nigeria can result in fatal haemorrhage.

Tahzib, 1983 and 1985 (CS) Nigeria in two case series describing vesico-vaginal fistulae, states that severe haemorrhage can result from FGM Type IV in the form of gishiri cuts.

3.6.1.2. Antenatal infection following FGM performed in pregnancy - identified by four studies

Asuen, 1977 (CR) Nigeria describes a case of FGM Type II, performed at 39 weeks gestation, admitted to hospital one day later with a diagnosis of septicaemia from ascending infection caused by FGM, with incidental pre-labour rupture of membranes.

Tahzib, 1983 and 1985 (CS) Nigeria states that infection may result from gishiri cuts.

Adetoro et al, 1986 (CR) Nigeria describe one case of an Igbomina - Ekiti woman who underwent FGM Type II when 32 weeks pregnant who developed infection at the site of FGM. Two weeks later she was admitted with genital sepsis and went into preterm labour.

Harrison, 1983 (OS) describes infection as occurring as peritonitis; a result of FGM IV and subsequent fistula formation.

3.6.1.3. Antenatal difficulty/inability to perform vaginal examination following herbs inserted to attempt to procure an abortion and subsequent vaginal atresia in pregnancy - identified by one study

Adelusi, 1975 (CR) Nigeria describes a multip woman in labour at term with vaginal atresia in whom an emergency caesarean section was performed. The author states this was due to the insertion of herbal suppositories into the vagina in an attempt to procure an abortion (i.e. FGM Type IV). The result was vaginal atresia in the presence of pregnancy.

3.6.1.4. Possible antenatal vesico-vaginal fistula/ rectovaginal fistula (VVF/RVF) following FGM in pregnancy - identified by two studies

Tahzib, 1983 (CS) Nigeria describes 1443 Nigerian women with vesico-vaginal fistulae of which 188 had experienced a gishiri cut, i.e. FGM Type IV. It is difficult to reliably state that gishiri cuts are a direct cause of VVF in all of these cases, as one of the main indications for gishiri cuts is obstructed labour itself, known to be the major cause of fistulae formation.

Harrison, 1983 (OS) Nigeria as a result of personal observations and those of colleagues states that gishiri cuts, practised as a treatment for obstructed labour among the Hausa and Fulani, may result in division of the urethra and bladder and formation of bowel and urinary fistulae.

3.6.1.5. Antenatal fetal injury following FGM in pregnancy - identified by one study

Harrison, 1983 (A) Nigeria states that fetal injury may occur as a result of gishiri cutting (defined as FGM Type IV).

3.6.2. Complications of FGM in pregnancy, at labour, and at delivery following FGM in pregnancy

3.6.2.1. Preterm labour following FGM in pregnancy - identified by one study

Adetoro et al, 1986, (CR) One case is described, presumed to be precipitated by infection at time of FGM Type II in pregnancy.

3.6.2.2. Obstruction (vaginal atresia) requiring caesarean section following FGM in pregnancy - identified by one study

Adelusi et al, 1975 (CR) One case of obstructed labour, due to acquired gynaetresia, is described. This is FGM Type IV. The author states that herbal pessaries had been inserted into the vagina in early pregnancy in an attempt to procure abortion.

3.6.2.3. Difficult labour following FGM in pregnancy - identified by one study

Agugua, 1982 (CS) describes two women out of 58 with FGM Type II who presented with a difficult labour (not further defined). The timing of the FGM for these individual women is unclear, although at least one woman in the study of a total of 73 individuals had had FGM performed in pregnancy.

3.6.2.4. Maternal death following FGM in pregnancy - identified by two studies

Asuen, 1977 (CR) describes a case of FGM Type II performed in late pregnancy, leading to ascending infection and maternal death from septicaemia.

Harrison, 1983 (OS) Nigeria describes maternal death from haemorrhage due to gishiri cuts as a treatment for obstructed labour.

3.6.2.5. Fetal death following FGM in pregnancy - identified by two studies

Harrison, 1983(OS) Nigeria states that stillbirth may be a consequence of gishiri cuts, FGM Type IV in labour. No frequencies are given.

Adetoro, 1986 (CR) Nigeria describes a case of a fresh stillbirth resulting from preterm labour following FGM Type II two weeks earlier.

3.6.2.6. Neonatal death following FGM in pregnancy - identified by one study

Asuen, 1977 (CR) Nigeria describes one case of neonatal death at two days old as a result of septicaemia, attributable to maternal genital sepsis from FGM performed the day prior to birth.

Table 11 Summary of studies with childbirth sequelae of FGM performed in pregnancy

Antenatal complications of FGM performed in pregnancy	FGM Type II	FGM Type IVa Gishiri (vaginal) cuts "treatment" for Obstructed Labour	FGM Type IVb Vaginal Herbal Pessaries	No FGM Type specified
Antenatal infection at site of FGM	Asuen (CR) (Ethnic group not stated) 1977 Adetoro (CR) Igbomina Ekiti N = 1 1986	Tahzib Number not stated 1983, 1985 Harrison (A) Hausa and Fulani Number not stated 1983		
Antenatal difficulty/inability to perform vaginal examination			Adelusi (CR) Ethnic group not stated N = 1 1975	
Antenatal haemorrhage at sit of FGM	Adetoro (CR) N = 1 1986	Harrison (A) Hausa and Fulani 1983		

Table 11 Summary of studies with childbirth sequelae of FGM performed in pregnancy (cont'd)

Antenatal complications of FGM performed in pregnancy	FGM Type II	FGM Type IVa Gishiri (vaginal) cuts "treatment" for Obstructed Labour	FGM Type IVb Vaginal Herbal Pessaries	No FGM Type specified
Possibly antenatal VVF/RVF		Harrison (A) Hausa and Fulani 1983 Tahzib N = 188 of 443 VVF cases		
Antenatal fetal injury		Harrison (A) Hausa and Fulani 1983		
?Antenatal maternal death	Asuen (CR) N = 1 from ascending infection from FGM wound and septicaemia			

Table 11 Summary of studies with childbirth sequelae of FGM performed in pregnancy (cont'd)

Antenatal complications of FGM performed in pregnancy	FGM Type II	FGM Type IVa Gishiri (vaginal) cuts "treatment" for Obstructed Labour	FGM Type IVb Vaginal Herbal Pessaries	No FGM Type specified
Preterm labour	Adetoro (CR) N = 1 1986 Asuen (CR) N = 1 1977 (both presumed to be precipitated by infection at the site of FGM)			
Obstetrician (vaginal atresia) requiring Caesarian section				Adeluso (CR) N = 1 1975
Difficult labour	Agugua (CS) N = 2/58 with difficult labour 1982			
Haemorrhage in labour		Harrison (A) Hausa and Fulani 1983		

Table 11 Summary of studies with childbirth sequelae of FGM performed in pregnancy (cont'd)

Antenatal complications of FGM performed in pregnancy	FGM Type II	FGM Type IVa Gishiri (vaginal) cuts "treatment" for Obstructed Labour	FGM Type IVb Vaginal Herbal Pessaries	No FGM Type specified
Maternal death in labour		Harrison (A) Hausa and Fulani (following haemorrhage in labour) 1983		
Fetal outcome complications of FGM performed in pregnancy	Adetoro (CR) N = 1 1986	Harrison (A) Hausa and Fulani 1983		
Fresh stillbirth				
Neonatal death (2 days)	Asuen 1977 (neonatal death said to be caused by septicaemia from maternal sepsis of FGM wound)			

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Table 12 Summary of studies included in the review arranged alphabetically by author

Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>Abdalla, R.H.D. 1982</p> <p>Sisters in affliction: circumcision and infibulation of women in Africa.</p> <p>Zed Press London 1982</p> <p>Chapter 4: 86-100 and Appendix</p>	<p>Interview/questionnaire in Mogadishu, Somalia during 4 week dissertation fieldwork period in 1980 with women n=70, men n=40</p> <p>Plus 3 case studies of women.</p> <p>Women selected from gynaecology out-patients clinic and Government Ministries and Agencies staff, men selected from Government Ministries and Agencies and also members of the public attending for services (true random sampling not employed)</p> <p>Age of respondents 20-60 years.</p> <p>Varying region of origin in Somalia, educational level, occupation, socioeconomic background.</p> <p>Questionnaires N=62 questions for women N=23 questions for men</p> <p>Type of FGM</p> <p>All women in study had FGM Type I (Sunna) n=9/70 removal of prepuce of clitoris only, preserving the clitoris itself and the posterior larger parts of the labia minora.</p>	<ul style="list-style-type: none"> • Special emphasis on social and health (physical and psychosocial) • Complications arising and future prospects e.g. willingness to circumcise daughter • Marital status • Type of FGM • Prevalence of FGM re daughters/sisters • Age at FGM • Conditions under which FGM performed • Feelings before the operation • Marriage and sexual experience • Attitudes towards uncircumcised women towards circumcision of women. 	<p>Who performed operation</p> <p>Traditional midwives 54/70 Trained midwives 16/70 NB number who had FGM performed more than once 10/70</p> <p>Emotions felt prior to operation</p> <p>Excited and frightened 40/70 (57%) Mixed feelings of joy and worry 14/70 (20%) Curious and eager to know what happens 11/70 (16%) Could not remember their exact feelings 5/70 (7%)</p> <p>Marriage and sexual experience</p> <p>Women married at least once 60/70 Anxious and frightened during first weeks of marriage 36/60 Mixed feelings of happiness and worry 20/60 Could not remember how they felt 4/60 Enjoy intercourse with husbands 25/60 Do not enjoy intercourse with husbands 30/60 (50%) because of: lack of sexual satisfaction 10/60 (16%) dislike of sexual act 6/60 (10%) dyspareunia 5/60 (5%) fear of pregnancy 6/60 (10%) shy about sexual act 3/60 (5%) Could not explain how or what they feel during sexual intercourse 5/60 (8%)</p> <p>Men</p> <p>Number of married men in sample = 32 (including divorced and widowed) enjoy intercourse with their wives 25/32 enjoyed intercourse with their wives only partially 7/32</p>	<p>Questionnaire - methodological issues</p> <ol style="list-style-type: none"> 1. Q individually completed for those who could read and write 2. Q administered individually by author to those who could not read and write 3. Also group interview - guided conversations held with groups of women unable to read and write. <p>Overcoming suspicions of respondents</p> <ul style="list-style-type: none"> • At outpatient gynaecology clinics, helped by medical staff in administering the interview • Use of Government Ministries and Agencies where those women able to read and write and who were less suspicious of the questions or the research

	<p>Type II (clitoridectomy) n=4/70 partial or total removal of the clitoris together with the adjacent tissues of the labia minora, sometimes the whole of it.</p> <p>Type III (pharonic) n=57/70 removal of clitoris, labia minora and at least the anterior two thirds of the labia majora with approximation of edges.</p> <p>Age at FGM: 5-13 years (55/70 at 5-7 years)</p>		<p>Married men questioned about sexual feelings of infibulated women n=32 Wives enjoyed sex with them 12/32 Wives hated sex with them 6/32 Did not know if wives enjoyed it or not 14/32 All men questioned about the differences between infibulation and uncircumcised women with respect to sexual intercourse i.e. comparing FGM III with FGM0 Enjoyed sex with non-circumcised women as able to share the desire, the act, the pleasure 12/40 Reported no difference 14/40 Had not had sex with uncircumcised women 14/40</p> <p>Complications arising from circumcision Immediate complications not extracted. Male respondents knowledge about health hazards of circumcision Admitted practice has ill effects of childbirth and menstruation 17/40 Not sure 11/40 Ignorance of effects 12/40</p> <p>Not extracted: Attitudes by socio-demographic status</p> <p>Case studies <i>Case 1: 45 year old nullip.</i> Recalls emotions at time of FGM: excited and happy eve of circumcision, unable to tolerate severe pain of circumcision, ran away bleeding after clitoridectomy, held down for infibulation Not extracted: immediate complications and care provided.</p> <p>Experiences during wedding</p> <ul style="list-style-type: none"> • Married at 14 • Husband used knife for defibulation, legs cut in struggle • Fever developed • Hospitalised for one week 	
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			<p>Sexual experiences Always frightened No enjoyment Submit to have sex to have children</p> <p>Obstetric experience Para 6 Each pregnancy resulted in prolonged labour up to 2 days and post partum infection</p> <p>Urinary problems “it used to take hours to urinate” (as virgins)</p> <p>Menstrual problems Pain Difficulty because so tightly sewn</p> <p><i>Case 2: 32 year old woman with FGM Type III</i> Immediate complications of FGM Not extracted</p> <p>Long term complications Keloid</p> <p>Wedding night experiences “really awful and filled with fear” refused to co-operate with husband for defibulation by his penis. Forced to hospital for defibulation. Post-defibulation infection. Always hated him and finally divorced. With 2nd husband although happy with him, rarely enjoys sex because of reservations and bad memories of it.</p> <p><i>Case 3: 35 year old woman</i> FGM Type III aged 7 years (two operations) FGM repeated aged 12</p>	
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			<p>Menstrual problems Pain Backache</p> <p>Wedding night experiences Defibulated by midwife “difficult miserable nights full of fear, worries, sleeplessness and sometimes even physical struggle and fights with her husband to prevent frequent, painful intercourse”. Still hates the sexual act.</p> <p>Obstetric Para 6 Childbirth always difficult with much suffering before and after.</p> <p>Not extracted: Attitudes Immediate complications of FGM Review of procedure of FGM in Africa and elsewhere Review of FGM customs and its ideology Review of historical perspectives Questionnaire published in full</p>	
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Table 12 Summary of studies included in the review arranged alphabetically by author

Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>ADETORO, O.O. EBOMOYI, E. 1986</p> <p>Health implications of traditional female circumcision in pregnancy.</p> <p>Asia-Oceania Journal of Obstetrics and Gynaecology 1989</p>	<p>A case report (Emergency admission of the University of Ilorin Teaching Hospital, Nigeria.</p> <p>Study size N=1</p> <p>Type II FGM (clitoris and labia minora partially excised)</p> <p>Age at FGM: FGM at 32 weeks of first pregnancy</p> <p>Ethnic group: Igbomina-Ekiti</p> <p>Kwara State</p>	<p>Followed up to 9 days post partum</p>	<p>34/40 pregnant 16 days following excision of clitoris and labia minora, admitted with genital sepsis. 5 day history of perineal pain offensive blood stained vaginal discharge</p> <p>Immediate complications</p> <ul style="list-style-type: none"> • haemorrhage transfused 2 units of blood • infection Pseudomonas pycaena staphaurecy from swabs. • obstetric preterm labour fresh stillbirth <p>Review of FGM age groups</p> <p>Isoko, Hausa (before marriage)</p> <p>Yoruba (infancy/childhood)</p> <p>Igbo Abakaliki (puberty)</p> <p>Ogbaru: Anambra state (1st pregnancy)</p> <p>Igbomina-Ekiti: Kwara State (in pregnancy)</p> <p>Not extracted: details of treatment</p>	<p><i>Suggests</i> immediate sequelae of FGM in 32nd week of pregnancy (Typical of Kwara state and Delta State)</p> <ul style="list-style-type: none"> • haemorrhage • infection: perineal sepsis and partial labial fusion • Preterm labour: probably from persistent hyperpyrexia • fresh stillbirth

Table 12 Summary of studies included in the review arranged alphabetically by author

Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>ANDERSON, G.V. 1929</p> <p>Problems of native maternity work with a review of two hundred cases.</p> <p>Kenya and East African Medical Journal 6 : 62-73 1930</p>	<p>Case series.</p> <p>All women attending Pumuanu native maternity and child welfare clinic in Kenya.</p> <p>N = 200 (First 200 maternity cases)</p> <p>Circumcised N = 134 Not circumcised N = 66</p> <p>Ethnic groups</p> <p>Kikuyu = 117 Nandi = 11 Kavirondo = 45* Waswahili*) Mtois) Nyasi) = 18 Mnyoro*) Mdurma*) Bagaunda = 11*</p> <p>* chief uncircumcised tribes (also Wakaverondo, Waduruma, Bunyoro)</p> <p>N = 200 FGM Type II/III n = 134</p> <p>(Mostly excision of clitoris and labia minora with resulting smooth scar between anterior ends of labia majora and urethra,</p>	<p>Obstetric complications and outcomes.</p>	<p>Immediate complications</p> <p>Sepsis.</p> <p>Long-term - Due to unskilful operation or much sepsis:</p> <ul style="list-style-type: none"> • Massive cartilaginous plaque including whole front of vulva and urethra. • Scarification of anterior vaginal wall and surrounding parts. <p>Obstetric</p> <p>“Scarring due to FGM is the chief complication of labour”.</p> <ul style="list-style-type: none"> • Obstruction • Milder forms (i.e. I/II) obstruction is slight and unimportant. • Multips: negligible • Primips: child can only be safely delivered after free incision on either side of vulva. • “More severe types of FGM scarring formidable” • “Lacerations of the perineum are not infrequent”. <p>Reasons for obstruction</p> <ol style="list-style-type: none"> 1. “Vulva narrowed and elastic labia majora are replaced anteriorly by a firm inelastic scar”. 2. “Mass below symphysis prevents extension of the head as the passage through the outlet of the pelvis occurs”. <p>Puerperal sepsis</p> <p>21% causes including septic perineal tears and septic inclusions for decircumcision</p> <p>Perineal tears</p> <p>“Perineal laceration occurring so frequently is probably accounted for by the rigidity of the vulva.</p>	<p>Compares obstetric outcome for FGM 0 and varying degrees of FGM, probably Types II and III.</p> <p><i>Suggests</i> obstetric outcome with FGM</p> <p>Mild ? FGM I/II Severe ? FGM III</p> <ul style="list-style-type: none"> • Obstruction is formidable • Need for multiple incisions/episiotomies • Perineal sepsis • Perineal laceration <p>Fetal</p> <p>Injury: Contributory to a high stillborn rate.</p> <p>States “Kavirondo seem to have an easier childbirth, no doubt connected with the absence of circumcision scars”</p> <p>Limited validity because data not all separated according to FGM/No FGM.</p>

	<p>sometimes in certain tribes also scarifying of anterior wall of vagina and surrounding parts.</p> <p>FGM 0 = 66</p> <p>Age at FGM: probably childhood.</p>		<p>Fetal Stillbirth</p> <p>Obstetric complications due to FGM “play an important part in death rate of first born”</p> <p>Stillbirth Kikuyu FGM+ 12/117 (10%) Kavirondon FGM 0 4/45 (11%)</p> <p>Birth injury</p> <p>“Intracranial injuries must be frequent”</p> <p>“Soft parts play a greater part than was previously accepted in birth injuries”.</p>	
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<p>ARBESMAN, M KAHLER, L. BUCK, G.M. 1993</p> <p>Assessment of the impact of female circumcision on the gynaecological and obstetrical health patterns of women from Somalia: Literature review and case series.</p> <p>Women and Health 1993 20 (3) : 27 - 42</p>	<p>SOMALI women from Mogadishu (aged 8 - 75, mean 32 ± 21 years).</p> <p>Residents of a refugee centre at Buffalo, New York, USA June - August 1990 awaiting immigration to Canada. Dept. of Social and Preventive Medicine. June - August 1990</p> <p>Case series: Personal interviews and interpreter.</p> <p>Study size: N = 12</p> <p>Type of FGM</p> <p>FGM III = 7 FGM I = 4 FGM 0 = 1</p> <p>Dept. of Social and Preventive Medicine, Buffalo, N.Y., U.S.A.</p> <p>Age at FGM: not stated in Somalia: usually childhood.</p>	<p>Personal interviews with an interpreter, standardised questionnaire. 69 closed 3 open-ended questions covering:</p> <ul style="list-style-type: none"> • Sociodemographic • Circumcision type • Menstrual problems • Obstetric/gynaecology • Urination • Genital infection • Psychosexual • Fertility <p>Not extracted:</p> <p>Views of women on practice of FGM. Immediate effects at time of circumcision.</p>	<p>Obstetric</p> <p>Labour and delivery</p> <p>Place</p> <p>Home 3/10 30% Hospital 6/10 60% Clinic 1/10 12%</p> <p>Delivery attendant</p> <p>Doctor 4/8 50% Nurse 3/8 38% Family member 1/8 12%</p> <p>Length of labour</p> <p>1.5 hours - 2 days (Mean = 8.3 ± 13 hours)</p> <p>Women who did not remember the length of labour 2/10 25%</p> <p>Type of delivery</p> <p>Caesarean section - 1 woman reason unknown, in the USA</p> <p>Neonatal birth weights</p> <p>Range from 6.6 - 11 pounds mean 8.3 ± 1.4 pounds</p> <p>- Did not remember birthweight 4/10 40% - All babies reported cried immediately - Baby died one day after birth 1/10 baby - Problems after birth 1/10 baby</p>	<p>Commentary</p> <p>Very small sample. 7 (60%) Type III 4 (33%) Type I 1 Type O</p> <p>No breakdown by type, relative to complications Reported problems only, not measured or observed.</p> <p>Implications</p> <p><i>Suggestive</i> poor outcomes of FGM Type III/Type I on</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Prolonged labour • Fetal distress • History of stillbirth • Neonatal death <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual problems dysmenorrhoea (severe pain) menorrhagia (heavy menstrual flow) • Urinary problems • Genital infection <p>Psychosexual</p> <ul style="list-style-type: none"> • Dyspareunia • Postcoital bleeding • defloration trauma • health worker necessary for defibulation at marriage

			<p>Gynaecological</p> <p>Menstrual problems Number over the age of menarche = 10</p> <p>Pain during menses 6/10 (60%) over age of menarche). Severe pain menses 1/10 (10%) Unable to go about their daily activities at some point of menstruation 3/10* (30%) Heavy menstrual flow 1/10 (10%) Abdominal pain at other times of month 8/10 Length of menstruation/mean 3.8 ± 1 day Regular menstrual cycle 9/10</p> <p>* Wrongly cited in text as 8 (37%)</p> <p>Urination problems Difficulty with urination 1/12 Takes a long time 2/8 (25%) Stream not straight 1/12 Straight stream 7/8 (88%) Pain during urination 3/11 (27%) Treated for urinary infection 3/8 (38%)</p> <p>Genital infection Infection in genital area 1/6 (17%) treated Somalia and USA.. Cyst in genital area 0 (0%) . Bad smelling discharge 1/7 (14%) Itching in genital area 2/7 (29%)</p> <p>Fertility - Planned pregnancy - 8/11 - 731 - Age at first pregnancy 16 - 26 years - Difficulty in becoming pregnant - none. - Still births 2/11 women.</p>	
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			<p>- Miscarriage - 2/11 women. (one at 5 months, one at 2-3 months).</p> <p>Psychosexual</p> <p>Marital opening of infibulation By doctor 4/7 (57%) By husband (penis) 1/7 (14%) By husband (other measures) 1/7 (14%) By special woman 1/7 (14%)</p> <p>Time of sexual intercourse: Average 4 days after marriage.</p> <p>Coital difficulties Dyspareunia 4/9 44% Internal 3/4 External 1/4 Heavier bleeding after marriage *2/5 40%</p> <p>* Seem to refer to bleeding on coitus.</p>	
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<p>AZIZ, F.A. 1980</p> <p>Gynaecologic and Obstetric Complications of Female Circumcision.</p> <p>International Journal of Gynaecology and Obstetrics. Vol. 17: 560 - 563.</p>	<p>? Cross sectional study University of Khartoum, SUDAN.</p> <ul style="list-style-type: none"> • Medical history and • clinical examination of women in Khartoum. <p>N = 7505.</p> <p>FGM Type I/II. Sunna “enlarged” clitoris removed and the stump ligated) least frequently found</p> <p>FGM Type III Pharaonic (removal of labia minora, most of the labia majora, the mons veneris and ‘sometimes’ the clitoris) occurs in 90% and modified Pharaonic (removal of clitoris, part of labia majora and use of catgut) becoming more common.</p> <p>Age at FGM: usually before 6 years</p>	<p>Prevalence and type of FGM complications.</p>	<p>FGM Type III (Pharaonic and modified Pharaonic 4%) around 100% 99.9 of 7505 - 7498</p> <p>FGM Type I/II “ Negligible number had Sunna” 0.1% of 7505 = 7</p> <p>Immediate complications Severe haemorrhage = 17/7505 (0.2%) (midwife failed to arrest it) Shock - due to bleeding. / due to pain (lack of anaesthesia)</p> <p>Urine retention 900/7505 = 12% due to pain and small introitus</p> <p>Acute infection with critical illness: Not unusual one week later. Tetanus often results in death.</p> <p>Injury to neighbouring structures: urethral meatal injuries 2/7505 (0.03%)</p> <p>Long term complications</p> <ul style="list-style-type: none"> • Scars and keloid 225/7505 (3%) • Vulval swelling: epidermal inclusion cysts. Not uncommon (especially in Eastern Sudan). • Difficulty of pelvic examination to assess size of uterus, to distinguish threatened or inevitable abortion and assessment of progress of cervical dilatation in labour, a common need for decircumcision. • Infertility because of difficulty of full penetration due to tight circumcision 165/7505 (2.2%) (infertile for more than 2 years) 	<p>Area with more than 99% FGM III.</p> <p><i>Suggests sequelae of FGM III.</i></p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Scars and keloid. • Vulval swellings • Implantation dermoid cysts. • difficulty in pelvic examination. • Infertility (60% due to penetration difficulties. <p>Obstetric</p> <ul style="list-style-type: none"> • Vaginal/perineal tears. • Anterior episiotomy necessary. • Decircumcision. <p>Psychosexual Penetration difficulties. Reduced sexual satisfaction.</p> <p>Psychosexual methodology Difficult to elicit information on sexual satisfaction.</p>

			<p>Psychosexual</p> <p>“Many seek medical help for tight circumcision”</p> <ul style="list-style-type: none">• Penetration difficulties 99/7505 (1.3%).• Reduced sexual satisfaction (as result of tight circumcision) <p>Obstetric</p> <ul style="list-style-type: none">• Difficulty in pelvic examination• Vaginal tears during delivery• Anterior episiotomy/decircumcision for each delivery, then resulting as before in a prolonged healing time because of fibrous scar tissue formation. <p>Not extracted:</p> <p>History of prohibition in Sudan and problem of seeking treatment for complications when FGM illegal.</p> <p>Change in practice from Pharaonic to modified Pharoanic.</p>	
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<p>AGUGUA N.E.N. & EGWUATU V.E. 1982</p> <p>Female circumcision management of urinary complications.</p> <p>Journal of Tropical Pediatrics 1982 28: 248-252</p>	<p>Case series</p> <p>Case records analysed from 1973-1981 of patients attending a paediatric and gynaecology outpatitnes with FGM complications</p> <p>University of Nigeria Teaching Hospital, Enugu, Nigeria</p> <p>Ethnic group Igbo</p> <p>N = 73 aged < 12 years = 55 aged 14 - 31 years = 18</p> <p>FGM Type II (simple excision = Ibe Ugwu, removal of clitoris with or without the labia minora)</p> <p>Age at FGM: 72/73 within 21 days of birth 1/73 in 7th month of pregnancy</p>	<p>Presenting complications of FGM</p> <ul style="list-style-type: none"> • paediatric • adult <p>Urinary problems following FGM.</p>	<p>Complications of FGM</p> <ul style="list-style-type: none"> • Adults n=18 <table border="0"> <tr> <td>Partial vulval stenosis</td> <td>11/18 61%</td> <td>Meatal obstruction</td> <td>2/18 11%</td> </tr> <tr> <td>Implantation Dermoid</td> <td>4/18 22%</td> <td>Labial fusion</td> <td>1/18 5.6%.</td> </tr> </table> <p>Presenting complaints following female circumcision n=58 (? adults + children).</p> <table border="0"> <tr> <td>Urinary</td> <td>21/58 36%</td> <td>Coital</td> <td>11/58 19%</td> </tr> <tr> <td>Cosmetic</td> <td>18/58 31%</td> <td>Infertility</td> <td>6/58 10%</td> </tr> </table> <p>Difficult labour 2/58 3.5%</p> <p>Adult urinary problems of Female Circumcision</p> <table border="0"> <tr> <td>Complete labial fusion</td> <td>1/3</td> <td>Poor urinary flow</td> <td>2/3.</td> </tr> </table> <ul style="list-style-type: none"> • Children n=55 <p>Immediate</p> <table border="0"> <tr> <td>Haemorrhage</td> <td>2/55</td> </tr> <tr> <td>Infection: septicaemia</td> <td>1/55</td> </tr> <tr> <td> tetanus</td> <td>1/55</td> </tr> <tr> <td> urinary</td> <td>2/55</td> </tr> <tr> <td>Rectovaginal fistua</td> <td>1/55</td> </tr> </table> <p>Longterm</p> <table border="0"> <tr> <td>Partial labial fusion</td> <td>16/55</td> </tr> <tr> <td>complete labial fusion</td> <td>11/55</td> </tr> <tr> <td>Implantation dermoid cyst</td> <td>14/55</td> </tr> <tr> <td>Introital stenosis</td> <td>2/55</td> </tr> <tr> <td>Urinary problems</td> <td></td> </tr> <tr> <td>Meatal obstruction</td> <td>3/55</td> </tr> <tr> <td>Urethral stricture</td> <td>2/55</td> </tr> </table>	Partial vulval stenosis	11/18 61%	Meatal obstruction	2/18 11%	Implantation Dermoid	4/18 22%	Labial fusion	1/18 5.6%.	Urinary	21/58 36%	Coital	11/58 19%	Cosmetic	18/58 31%	Infertility	6/58 10%	Complete labial fusion	1/3	Poor urinary flow	2/3.	Haemorrhage	2/55	Infection: septicaemia	1/55	tetanus	1/55	urinary	2/55	Rectovaginal fistua	1/55	Partial labial fusion	16/55	complete labial fusion	11/55	Implantation dermoid cyst	14/55	Introital stenosis	2/55	Urinary problems		Meatal obstruction	3/55	Urethral stricture	2/55	<ul style="list-style-type: none"> • One of women had FGM in pregnancy although complications due to FGM at this time not described separately <p><i>Suggests</i> long term complications of FGM Type II</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Partial vulval stenosis. • Implantation dermoid • Infertility (no details given) <p>Urinary</p> <p>Meatal obstruction</p> <ul style="list-style-type: none"> • Complete labial fusion • Difficult labour (no details given) <p>Psychosexual</p> <ul style="list-style-type: none"> • Coital problems. <p>Not Extracted</p> <p>Details of treatment</p>
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<p>ASUEN M.I. AHNAIMUGAN S. 1978</p> <p>Acquired Gynaetresia in Nigeria</p>	<p>Case series N=31 (aquired gynaetresia following surgery excluded) Total gynaecology admissions during the 4 year period=3735 (therefore cases=0.8% of all admissions)</p> <p>All cases seen at University of Benin Teaching Hospital, Nigeria from 1973-1977</p>		<p>Causes of acquired gynaetresia Chemical vaginitis = 80%, n=25 Female circumcision =10%, n=3 (Type II FGM) Obstetrical injuries = 10%, n=3</p> <p>Reasons for insertion of native herbal pessaries procuring an abortion = 8/25 Treatment of infertility = 4/25 Amennorrhoea = 5/25 Efflurium seminis = 1/25 Menorrhagia = 1/25 Vaginal discharge = 1/25 Abdominal swelling = 1/25 Threatened abortion = 1/25 To get rid of bad blood = 3/25</p> <p>Clinical presentation of aquired gynaetresia Dsypareunia/Apareunia = 17/31 Amenorrhoea = 5/31 Infertility = 3/31 Abdominal pain = 2/31 Asymptomatic 2/31 Abdominal mass 1/31 Post coital bleeding = 1/31</p> <p>Examination findings (difficult to interpret as not separated by cause of aquired gynaetresia) Complete stenosis and haematocolpos = 2/31 Incomplete stenosis = 25/31 Intraital narrowing = 2/31 Labial fusion caused by FGM = 2/31 Not extracted: details of treatment</p>	<p>Case series Type of FGM = II (small sample n=3) Age at FGM variable</p> <p><i>Suggestive</i> outcomes of acquired vaginal atresia</p> <p>Psychosexual</p> <ul style="list-style-type: none"> • dyspareunia/apareunia • Post coital trauma • Infertility <p>Menstrual problems <i>Suggests</i> outcome of FGM II</p> <ul style="list-style-type: none"> • Acquired vaginal atresia

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<p>ADELUSI, ONIFADE, A AKANDE, O</p> <p>Acquired gynaetresia obstructing labour: a case report.</p> <p>Nigerian Medical Journal 1975 Vol. 5 : 271-273.</p>	<p>Case Report:</p> <p>30 year old para. 3 Nigerian woman presented at University College Hospital, Ibadan, Nigeria.</p> <p>FGM type not stated, but probably Type IV.</p> <p>Cause of vaginal atresia thought to be due to attempt at procuring an abortion using herbal suppositories in view of previous normal deliveries.</p> <p>Age at FGM: probably early pregnancy</p>	<p>Transferred to hospital after 3 days of strong labour contractions and “no progress”.</p> <p>Followed to discharge on 12th day post partum.</p>	<p>On examination in labour at term, shallow vaginal depth 3cm with complete occlusion proximal to this and no cervix identifiable. Head of fetus bulging above occlusion.</p> <p>No mention of presence of FGM.</p> <p>Emergency caesarean section performed because of occlusion of vagina, i.e. obstruction.</p> <p>Not extracted: Treatment details post-partum.</p>	<ul style="list-style-type: none"> • FGM in pregnancy • FGM Type IV • Caustic chemical vaginitis commonest cause of acquired atresia inserted to treat amenorrhoea, infertility and vaginal discharge. Also to promote abortion. <p>Acknowledges FGM Type II as a possible cause of vaginal atresia, but suggests sequelae rare with limited excision of labia minora and tip of clitoris in early infancy.</p> <p><i>Suggests</i> complications of FGM II can occur.</p> <p>Gynaecological Fibrous scarring of vulval orifice.</p> <p>Obstetric Deep episiotomy “<i>should</i>” prevent obstructed labour.</p>

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<p>ARTHUR, J.N. 1942</p> <p>Female circumcision among the Kikuyu</p> <p>British Medical Journal Oct. 24th 1942 : 498. Letter).</p>	<p>Personal communication.</p> <p>Kikuyu, Kenya.</p> <p>FGM Type I, II and III.</p> <p>Major (usual type) removal of clitoris, labia minora, half of labia majora and surrounding tissue.</p> <p>So-called “minor” clitoridectomy</p> <p>Probably based on observational series</p> <p>Age at FGM: not stated, among Kikuyu, usually childhood.</p>		<p>Immediate complications</p> <ul style="list-style-type: none"> • Extreme inflammation. • Extensive scarring. • Profuse bleeding sometimes leading to death. <p>At puberty Psychological and psychosexual effects.</p> <p>Long term complications</p> <ul style="list-style-type: none"> • Extensive scarring. • Urination problems. • Menstrual problems. • Coital difficulty “nduri”. <p>Obstetric Most disastrous results occur in primips.</p> <ul style="list-style-type: none"> • Prolonged labour. “labour is always delayed”. • Maternal death. “mother often dies”. • Fetal death. “child often dies”. • Need for (sometimes several) “extra incisions” to facilitate delivery. <p>Not extracted: Change in FGM practice: Reduction in severity of operation following “some girls saved by advice and pressure from Government and strong stand from some of the Missions from 1916 onwards, so becoming a thing of the past”.</p>	<p>No primary data. <i>Suggests sequelae to FGM III.</i></p> <p>Immediate</p> <ul style="list-style-type: none"> • Extreme inflammation • Haemorrhage • Death <p>Gynaecological</p> <ul style="list-style-type: none"> • Extensive scarring • Menstrual problems • Urinary problems <p>Psychosexual</p> <ul style="list-style-type: none"> • Coital difficulties (“nduri”). • Psychological and physical effects at puberty. <p>Obstetrics</p> <ul style="list-style-type: none"> • Prolonged labour. • Extra cuts: episiotomies. • Maternal death. • Fetal death.

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<p>DAMAS R, WAAG J, AOUBA</p> <p>Fistules vesico-vaginale obstetricales africaines (a propos de 47 observations)</p> <p>Medecine Tropicale 1972; 32(4): 493-498</p>	<p>Case series</p> <p>N = 47 VVF (vesico-vaginal fistula), total over two years (20 months)</p> <p>N = 37 observed and reported</p> <p>at Military Hospital of Bobno-Dioulasso, Burkina Faso</p> <p>FGM type: not stated</p> <p>Age at FGM: not stated</p>		<p>No information on precise aetiology of VVF except scar tissue dominates the clinical picture.</p> <p>Also compares and reviews data from Serafino 1967 (no ref.)</p> <p>N = 320 observations, saw 30 VVF per year, between 1954 and 1965 in hospital le Dantec (country not specified)</p>	<p>“Scar tissue dominates the clinical picture” suggesting scar tissue due to FGM is important in association with VVF</p>

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<p>de Villeneuve, A 1937</p> <p>Étude sur une coutume Somalie: les femmes consues</p> <p>Journal Société des Africanistes, 1937; 7(1): 15-32</p>	<p>Observational interview study by French female anthropologist, could be pseudonym</p> <p>Women and prostitutes January - May 1936</p> <p>Somali/Djibouti (probably “French coast of Somalia”)</p> <p>Age at FGM: 6-8 years</p> <p>Type of FGM and ethnic groups Infibulation Type III practised by Somalis</p> <p>When living near Somalis also Danakils, Gallas and Yemenis. Widespread from Gulf of Tadjourah to Cape of Gardafui and on desert lefthand side to Ethiopian mountains down to Harrar</p>	<p>Psychosexual Psychological Pregnancy Delivery Gynaecological</p> <p>Not extracted: Details of procedure Immediate problems</p>	<p>Psychosexual</p> <ul style="list-style-type: none"> • Marriage problems • penetration difficulties • defibulating cut by husband often clumsily done • extremely painful, “souvenir d’horreur” • repeated sexual contacts stop new wound sealing • obligation of new husband to be seen with his (“little knife”) dagger on his shoulder to show he has opened and taken possession of his new wife. (In Djibouti where no daggers are allowed to be carried it is replaced by a stick or scabbard). • no deaths heard of at marriage • frigidity <p>Sexuality and pleasure, fear and beatings</p> <ul style="list-style-type: none"> • “the knife presides over sexuality, she cannot or does not want to understand it can be any other way” <p>“To question a Somali woman on her sexuality and any pleasure she might feel from love is to throw (words) against a wall of incomprehension”.</p> <p>“If confidence can be established she purses her lips in disgust, women of Somalia suffer three pains, when FGM done, at marriage and at birth.”</p> <ul style="list-style-type: none"> • “Fear of the man, fear of beatings, no law to protect her” “‘They are at mercy of a violent man without any tenderness’” • “Do not wish to talk about it” <p>Dyspareunia</p> <p>“Even prostitutes with whom one might expect to find indifference or disgust say the act of love is painful for them”</p> <ul style="list-style-type: none"> • Some women do accept men without suffering, without fear ?less mutilated, ? less suffering from man <p>However close questioning soon reveals:</p> <ul style="list-style-type: none"> • no real sensuality, coquetry merely to get pregnant, to avoid the bad luck of sterility • infertility 	<p>See results column</p> <ul style="list-style-type: none"> • Psychosexual sequelae • Psychological sequelae • Gynaecological sequelae • Childbirth sequelae

			<ul style="list-style-type: none"> • No sensitivity in woman, from excision of clitoris, “also her vaginal sensitivity is rudimentary and atrophied”. • ”No homosexuality and no masturbation” “Women lie down together for their siesta, but it is the tenderness of the little girls they have remained. They go no further despite what people say. Their kitten-like gestures are a little sweetness in their often violent and sad lives, an obscure and symbolic regret of the voluptuousness they have been denied.” <p>Psychological</p> <p>Most women expected not to talk of act of love, never to be naked even with their husband, never to show an immoderate desire for a man. Prostitutes greatly despised in their quarter, considered mad/taken over by demons, they use foul language, dance naked, leave the door of their shack half open, insulted verbally and with a traditional gesture meaning “gaping hole”.</p> <ul style="list-style-type: none"> • Abnormal sadness “the sadness of the Somali race has always struck travellers (as much as its beauty”. “Men, women, young and old, only young children are free from this mark, perpetual sadness seems to weigh on their being”. “Nothing ever seems to give them pleasure”. “Having waited in vain for “do not know what kind of happiness” they have given up for ever and waste their lives in vain dreams”. “There are many other contributors to depression, the nomadic lifestyle, climate, poverty but (I am) convinced it is caused by their sexual practices”. <ul style="list-style-type: none"> • Feel impotent/revulsion towards husbands. They do not love him. • Cruel to daughters, lack tenderness to sons, often beating them and throwing them in the streets, making them beg if hungry, unbending if sick or hurt, no interest in child, it belongs to the husband. • envy/jealousy/huge passion about jewellery, clothing • Strong attachment to charms/aphrodisiacs/sorcery/afraid of devils Seances to get rid of devils, cataleptic state frequent • Madness almost unknown 	
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			<p>Gynaecological</p> <p>Haematocolpos, “common when sealed too conscientiously or inflammation occurs”.</p> <p>Dysmenorrhea “nearly all women complain (but may have no relation to FGM)”.</p> <p>Childbirth.</p> <ul style="list-style-type: none"> • “Talk of “winning” a baby, not having one, more a lottery/recompense for a kind of courage”. • Episiotomy - successive pregnancies will each require a new operation, “the child cannot get out of a wall of flesh”, a cut is needed to allow the birth. <p>The “grandmother” is again called with her “old knife” and a cut is done when the head appears at each delivery</p> <p>Maternal death</p> <ul style="list-style-type: none"> • Fairly frequent clumsiness cutting the flesh wall can cut the bladder • Numerous cases of vaginal fistula and urogenital fistula • puerperal fever at childbirth can lead to maternal death (?as result of FGM or just anyway) • Death in childbirth is not rare <p>Not extracted:</p> <p>Detailed procedure at birth</p> <p>Immediate complications</p> <p>Infections, much lower than has been claimed due to cleanliness of villages, vitality, cleanliness of the desert</p> <p>Death of child is not rare and does occur in little girls at age for excision - there are cases where FGM wound degenerates to a tropical ulcer</p>	
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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>BAKER, C.A. GILSON, G.J. VILL, M.D. CURET, L.B. 1993</p> <p>Female circumcision: obstetric issues.</p> <p>American Journal of Obstetrics and Gynecology 1993 169 : 1616-1618</p>	<p>Case report: Obstetric issues of female circumcision.</p> <p>A Sudanese woman: Multip.</p> <p>FGM Type III.</p> <p>Age at FGM: in Sudan usually childhood: 4 - 7 years.</p>	<ul style="list-style-type: none"> • Antenatal care (two previous Caesarean sections). • Delivery • 6 week postnatal check. 	<p>Obstetric</p> <p>Antenatal</p> <ul style="list-style-type: none"> • Wanted care from “provider knowledgeable about and comfortable with FGM”. • Difficult to perform adequate pelvic examinations because of vulval scarring. • Dyspareunia. <p>In labour</p> <ul style="list-style-type: none"> • Difficult to catheterise. • Difficult to perform vaginal examinations to assess stage of labour. <p>At delivery</p> <ul style="list-style-type: none"> • Need for anterior episiotomy. • Raw edges oversewn <p>Gynaecological</p> <p>Difficult to perform pap smear.</p>	<p><i>Suggests sequelae of FGM Type III</i></p> <p>Obstetric complications</p> <ul style="list-style-type: none"> • Urinary retention. • Vaginal examination difficult. • Anterior episiotomy. • Need for adequate analgesia.

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<p>BAYOUDH, F. BARRAK, S. BENFREDJ, N. ALLANI, R. HARNDI, M. 1995</p> <p>Etude d'une coutume en Somalie la circoncision des filles.</p> <p>Medecine Tropicale 55 : 238-242 1995</p>	<p>Cross-sectional interview study in Mogadishu, Somalia, with range of regional origin and range of sociocultural groups. Either attenders bringing children for paediatric consultation or workers in the project.</p> <p>N = 300 women (aged 20-40, generally married, 66% city born).</p> <p>N = 70 men (only 2 married, men 50% rural, 50% city born)</p> <p>14% clinic workers, 80% workers or unemployed, 6% university level.</p> <p>Conducted during Operation "Restore Hope" (? after the war).</p> <p>Age at FGM: 5 - 13 years Most under 10 years.</p>	<p>Aims of study:</p> <ul style="list-style-type: none"> • Prevalence of FGM procedures. • Physical, social and psychological aspects of FGM. 	<p>Psychosexual</p> <ul style="list-style-type: none"> • 25% divorce rate • defibulation at marriage leading to fear or frigidity • 15% FGM Type III never enjoyed sexual relations • 2 "completely normal" men said wives enjoyed sexual intercourse <p>Prevalence</p> <p>100% women had FGM N = 300</p> <p>240/300 Type III FGM 24/300 Type II FGM 36/300 Type I FGM</p> <p>Complications</p> <p>Infection 60% Haemorrhage 20% Double episiotomy 10%</p> <p>Not extracted:</p> <p>% supporting practice (high)</p>	<p><i>Suggests</i></p> <p>Psychosexual</p> <ul style="list-style-type: none"> • divorce rate may be associated with FGM • fear/frigidity in first weeks of marriage • sexual relations not enjoyed • some completely normal <p>Obstetric</p> <ul style="list-style-type: none"> • double episiotomy <p>Methodological</p> <ul style="list-style-type: none"> • marriage and sexual experience - difficult to elicit information

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<p>BERADI, J.G. TEILLET, J.F. GODARD, J. LALAUX, V. ALLANE, P. FRANJAI, M.H. 1985</p> <p>Consequences obstétricales de l'excision féminine.</p> <p>Obstetric sequelae of circumcised women.</p> <p>Journal of Obstetrics, Biology and Reproduction 14 : 743-746, 1985</p>	<p>Review: FGM Type II FGM 0 observed in labour in hospital in France.</p> <p>Enlisted in labour from antenatal clinic: Multiethnic groups.</p> <p>Case control (not family matched) All delivered during same period.</p> <p>FGM Type N = 71 FGM II Breakdown by nationality Senegal = 49/71 Mauritania = 13/71 Mali = 7/71 Cote d'Ivoire = 1/71 Zaire = 1/71</p> <p>N = 781 FGM II (ethnic origin: African, French, Maghrebines).</p>	<ul style="list-style-type: none"> • Caesarean section rate • Fetal distress in labour • Appearance of caput on fetus • Forceps delivery rate • Episiotomy rate • Perineal tear rate 	<p>Caesarean Section FGM II = 12% FGM 0 = 11%</p> <p>Fetal distress measured by appearance of decelerations of >30 bpm on Fetal Cardio Toco Graph during the 1st and 2nd stages of labour; or the formation of caput "bosse serosanguine" FGM II 2/71 = 2.8% FGM 0 18/871 = 2.3%</p> <p>Instrumental delivery rate (forceps) Primips: FGM II = 3/9 33% FGM 0 = 68/227 30% Multips. FGM II = 1/53 1.9% FGM 0 = 17/471 3.1%</p> <p>Episiotomy & perineal tears rate Primips - episiotomy FGM II = 8/9 89% FGM 0 = 123/227 54% Primips. - perineal tears FGM II = 1/9 11% FGM 0 = 9/227 3.8% Multips. - episiotomy FGM II 8/53 15% FGM 0 56/471 12% Multips - perineal tears FGM II 12/53 22.6% FGM 0 14/471 3.0%</p> <ul style="list-style-type: none"> • Significantly increased episiotomy rate among FGM group at p < 0.001 in primips only • Significantly increased perineal tear rate in FGM group at p < 0.001 in primips and multips 	<p>Comments:</p> <p>Case control study of deliveries in a hospital setting.</p> <p>Compares FGM II and 0.</p> <p>Controls matched by parity only</p> <p>Implications: Obstetric sequelae Statistically significant increase in</p> <ul style="list-style-type: none"> • primips and multips perineal tear rate and primip episiotomy rate in group with FGM Type II. <p>Neonatal</p> <ul style="list-style-type: none"> • No significant difference between rates of fetal distress (measured by CTG in labour in neonates of mothers with or without FGM • No information on stillbirth

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<p>BROTMACHER, L. 1955</p> <p>Medical Practice Among the Somalis.</p> <p>Bulletin of the History of Medicine. May-June 1955 Vol. 29 (3) : 197-229.</p>	<p>Socio-anthropological review.</p> <p>Fieldwork in 1948 by physician in Dagabur, Hargeisa, Somalia</p> <p>Medical practice and health beliefs.</p> <p>Midgan ethnic group.</p> <p>Age at FGM: shortly before menarche.</p> <p>FGM Type III.</p> <p>Excision of clitoris, labia minora and infibulation.</p> <p>N.B.</p> <p>Gishiri cuts (lateral cuts in vagina) to relieve obstructed labour.</p>		<p>Person who performs FGM</p> <ul style="list-style-type: none"> • Midgan woman. <p>Defibulation</p> <ul style="list-style-type: none"> • by husband • at onset of labour if reinfibulated. in pregnancy. <p>Reinfibulation</p> <ul style="list-style-type: none"> • sometimes early in pregnancy. • after childbirth. • <u>Not</u> after widowhood or divorce. <p>Complications (? immediate)</p> <ul style="list-style-type: none"> • Sepsis. “common but healing satisfactory” <p>Not extracted:</p> <ul style="list-style-type: none"> • traditional medicine from Mullah, Midgan, Wadad. • beliefs about menstruation. • anatomy of genitalia recognised. • causation of disease and congenital abnormality. • therapeutics/surgery • forms of menstrual disturbance (as not related to FGM status). 	<p>FGM Type III in childhood</p> <p>FGM Type IV (Gishiri cuts) in pregnancy in Somalia as treatment for obstructed labour.</p>

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<p>BODDY J 1982</p> <p>Womb as oasis: the symbolic context of Pharaonic circumcision in rural Northern Sudan.</p> <p>American Ethnologist 1982 9 : 682-698</p>	<p>Ethnographic study 1976-77 and anthropological review.</p> <p>Based on experiences in Sudanese village 200 km south of Khartoum on Nile.</p> <p>FGM Type III. (Infibulation).</p> <p>N = unknown.</p> <p>Age at FGM: not stated.</p>	<ul style="list-style-type: none"> • Virginity • Fertility • Sexual complementarity <p>Not extracted:</p> <ul style="list-style-type: none"> • Anthropological review of context of FGM and re-infibulation. • Immediate effects. • Changes to more anaesthetised and more sterile procedures since 1969. • Rationale (clean, smooth, pure). 		

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<p>BEINE, K. FULLERTON, J. PALINKAS, L. ANDERS, B. 1995</p> <p>Conceptions of Pre-natal care among Somali Women in San Diego. U.S.A.</p> <p>Journal of Nurse Midwifery 1995 40 : July-August 376-381.</p>	<p>In-depth interviews.</p> <p>Somali women who had received pre-natal care in the United States recruited through “community social work”.</p> <p>Age range 20 - 42 years.</p> <p>All Muslim.</p> <p>N = 10 (and 4 other Somali women who had not had children or prenatal care in U.S. but helped provide cultural background information).</p> <p>Interview in “focus groups”.</p> <p>Type III FGM.</p> <p>Age at FGM: in Somalia usually childhood.</p>	<p>Opinions in antenatal and delivery care received.</p>	<p>“Data reduction procedures of content analysis”.</p> <p>Female Circumcision</p> <ul style="list-style-type: none"> • Number that had undergone FGM undisclosed, as all women did not feel comfortable to discuss this. • Somali women stated the reaction of some USA health care workers had caused some women great humiliation. <p>Labour and delivery</p> <ul style="list-style-type: none"> • Fear of Caesarean Section if overdue may lead to under- utilisation of antenatal services at term. • Concern over episiotomy and perineal repair. <p>Not extracted: Medical technology, abortion, contraception and Family Size, social support, religion and gender of health care provider, prenatal practices, financing prenatal care.</p>	<p>Highlights need for further research into fears of women with FGM about labour and delivery</p> <p>Data suggests education needed for health care professionals regarding FGM.</p> <p>Useful data for provision of care for Somali women.</p> <p><i>Suggests</i> sequelae of FGM Type III among Somali women in U.S.</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Fear of Caesarean section (as result of health workers unfamiliar with infibulation). • Fear of episiotomy and type of perineal repair postpartum.

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<p>BROWN, Y. CALDER, B. RAE, D. 1989</p> <p>Female Circumcision.</p> <p>Canadian Nurse 1989 85(4): 19-22</p>	<p>Postal survey in 1986</p> <p>Questionnaires sent to 800 English speaking women in Somalia.</p> <p>N = 500 enrolled in schools of nursing in Mogadishu and Hargeysa. N = 300 attending the College of Education at Lefoole.</p> <p>Sample included women from all over Somalia</p> <p>FGM type: not stated</p> <p>Age at FGM: 5 - 7 years.</p>	<ul style="list-style-type: none"> • Circumcision prevalence • Age at FGM • Complications of FGM short and long term. • Acceptable categories • Acceptable care givers and interventions and rationale for refining services 	<p>Age at FGM: 5 - 7 years.</p> <p>Urinary complications</p> <p>Long term problem:</p> <ul style="list-style-type: none"> • Recurrent urinary tract infection • Takes long time to urinate <p>Gynaecological</p> <ul style="list-style-type: none"> • Infertility • Vaginal infections • Menstrual problems <p>Severe dysmenorrhoea. Reported by 68/105 - 65% of respondents</p> <p>Psychosexual</p> <ul style="list-style-type: none"> • Difficulty in penetration • Unable to discuss problem with partners <p>Obstetric</p> <p>6/105 had given birth (5.7%)</p> <ul style="list-style-type: none"> • Antenatal fears about size of vaginal opening at delivery • <i>Some</i> women tried to limit fetal size to ease birth • <i>Most</i> women reported a difficult birth and large episiotomy • 5/6 length of labour 24-73 hours • 1/6 length of labour 2 hours • Resutured as infibulation <p>Neonatal</p> <p>2/6 babies died.</p> <p>Not extracted: Immediate complications. Treatment to ease dysmenorrhoea</p>	<ul style="list-style-type: none"> • Postal survey • Self reported experience of complication • Poor response rate due to “loss in transit” • No breakdown into types of FGM • No details on incidence/prevalence of FGM among sample • Sample too small to interpret significance of neonatal deaths <p><i>Suggests</i> long term sequelae of FGM.</p> <ul style="list-style-type: none"> • Urinary complications • Psychosexual • Gynaecological/Menstrual • Obstetric • Neonatal. (two neonatal deaths) <p>Methodological problems</p> <p>Demographic questions not answered</p> <p>authors suggest seen as irrelevant</p>

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<p>CAMPBELL M and ABU SHAM Z 1995</p> <p>Sudan: Situational analysis of maternal health in Bara District, North Kardofan.</p> <p>World Health Statistics Quarterly 48: 60-66.</p>	<p>Qualitative Study.</p> <p>Aim to explore factors responsible for high Maternal Mortality Rate in Bara district, Sudan.</p> <p>Method: Interviews Focus groups Direct observation N = unknown</p> <p>FGM - Type III prevalence around 97% in Bara district.</p> <p>Age at FGM: in Sudan: Childhood</p>		<p>Contributing factors to maternal mortality and morbidity.</p> <ul style="list-style-type: none"> • FGM • Post obstetric history • Inaccessibility of health care facilities. <p>FGM related obstetric complications</p> <ul style="list-style-type: none"> • Infection: Urinary Reproductive tract Puerperal. • Need for defibulation • Tearing of scarred vulva • Urinary or rectal fistulae <p>Not extracted: Direct causes of maternal death.</p>	<p>Area of high FGM III rate.</p> <p>No comparative groups.</p> <p>Primary data</p> <p>Self reported data</p> <p>Suggests</p> <p>Obstetric sequelae of FGM.</p> <ul style="list-style-type: none"> • Need for anterolateral or lateral episiotomy. • Infection • Defibulation and its complications • Perineal tears. • Vesicovesical fistulae. • Rectovesical fistulae.

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<p>CANNON D.S.H. HARTFIELD V.J. 1964</p> <p>Obstetrics in a developing country: A survey of 6 years work in a Nigerian Hospital.</p> <p>Journal of Obstetrics and Gynaecology of British Commonwealth. 71 : 940-950 1964</p>	<p>General Obstetric Survey</p> <p>Wesley Guild Hospital, Ilesha, Southern Nigeria. 1957 - 1962</p> <p>N = 6848 confinements, Ilesha Hospital N = 1032 births Jonesille MCH Centre</p> <p>Number with FGM unknown.</p> <p>FGM Type ?II (some groups of Yoruba)</p> <p>Age at FGM: among Yoruba - 7 - 21 days old i.e. neonatal.</p>	<ul style="list-style-type: none"> • Obstructed labour <p>Not extracted: General data on: Twins; malaria in pregnancy; anaemia in pregnancy; haemorrhage in pregnancy; pre-eclampsia; maternal mortality; eclampsia; perinatal mortality; weight gain; colporrhexis (laceration involving upper part of vagina and extending to cervix); caesarean section; ruptured uterus; symphiotomy; forceps extraction; destructive operating; stillbirth rate at MCH centre.</p>	<ul style="list-style-type: none"> • Obstructed labour <p>Delay in labour due to soft tissue rigidity is rare.</p> <p>Torn perineum relatively uncommon.</p> <p>splits in scar tissue either side of clitoris are seen (implies regularly).</p> <p>Not extracted: Other data given for obstructed labour. Disproportion. Uterine action.</p>	<p><i>Suggests</i> obstetric sequelae of FGM seen in Ilesha</p> <ul style="list-style-type: none"> • “Scarring is rarely enough to cause difficulty in labour”. • Except splits in scar tissue either side of clitoris are seen.

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<p>DAW, E. 1970</p> <p>Female circumcision and infibulation complicating delivery.</p> <p>The Practitioner 1970 204 : 559 - 563</p>	<p>Case reports.</p> <p>N = 3</p> <p>Population: Sudanese women delivering in Sheffield, U.K.</p> <p>FGM Type III.</p> <p>Age at FGM: 4–7 years.</p>	<p>Influence of FGM vulval deformity on delivery.</p>	<p>Antenatal periods uneventful.</p> <p>Obstetric complications</p> <p>Episiotomies: All had posterior lateral episiotomies.</p> <p>Describes delivery “under the hood of fused labia anteriorly” in all three cases.</p> <p>Forceps and prolonged 2nd stage of labour in 2/3.</p> <p>Not extracted:</p> <p>Review of literature in immediate, long term and obstetric complications.</p>	<p>Very small case series.</p> <p>No mention of anterior episiotomy, blood loss at delivery, etc.</p> <p>Cannot comment on forceps rate due to small size of sample.</p> <p><i>Suggests</i> sequelae of FGM.</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Episiotomies. • Prolonged labour • Instrumental delivery.

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<p>DEWHURST, C.J. MICHELSON, A. 1964</p> <p>Infibulation complicating Pregnancy.</p> <p>British Medical Journal 5 December 1964 p. 1442</p>	<p>Case report.</p> <p>Sheffield, U.K.</p> <p>Sudanese woman aged 22 years</p> <p>FGM type not stated probably Type III (but examination revealed as reported in other cases, that clitoris had not been excised).</p> <p>Age at FGM: 11 years.</p> <p>Defibulation performed at 30 weeks pregnant.</p>		<p>Obstetric</p> <p>Pregnancy in presence of pinhole introitus.</p> <ul style="list-style-type: none"> • Impossible to perform antenatal vaginal examination before defibulation had been performed. • Normal vaginal delivery after defibulation. <p>Psychosexual</p> <ul style="list-style-type: none"> • Failure in penetration. • Pregnancy in presence of pinhole introitus. • Dyspareunia. <p>Not extracted:</p> <p>Treatment details.</p>	<p>Sequelae of FGM.</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Difficulty in performing vaginal examinations antenatally or in labour. • Pregnancy despite failure of penetration. <p>Psychosexual</p> <ul style="list-style-type: none"> • Failure in penetration. • Dyspareunia. • Pit/depression 1½ - 2 inches deep at posterior aspect of labia minora. Probably false vagina.

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<p>DeSILVA, S. 1989</p> <p>Obstetric Sequelae of Female Circumcision</p> <p>European Journal of Obstetrics and Gynaecology and Reproductive Biology 1989</p> <p>32 : 233-240</p>	<p>Cross sectional childbirth study all types of FGM and no FGM.</p> <p>All patients booked and delivered at King Abdul Aziz University Hospital, Riyadh, Saudi Arabia Jan-Dec 1985</p> <p>N = 2163 (Unbooked N = 27 excluded).</p> <p>Group A = FGM (All Sudanese)</p> <p>(Non-Sudanese = 6 excluded for group homogeneity)</p> <p>Breakdown by type of FGM</p> <p>FGM I n = 20</p> <p>FGM II n = 76</p> <p>FGM III n = 71</p> <p>Group A N = 167</p> <p>Group B = No FGM</p> <p>Breakdown by nationality</p> <p>Saudi = 1704</p> <p>Sudanese = 58</p> <p>Eritrean = 4</p> <p>Egyptian = 177</p> <p>Somali = 1</p> <p>Yemen = 28</p> <p>Asian = 18</p> <p>Group B N = 1990</p>	<p>Antenatal</p> <ul style="list-style-type: none"> Infection Urinary and vaginal infections. Labour Duration of Stage I and II of labour. Complications of labour. Types of decircumcision. Episiotomy rate. Neonatal Apgar score. Other Vulval pathology Duration of stay in hospital. Incidence of FGM by age and parity. <p>Type of FGM. FGM distribution by parity. Mean age of each parity. Age group of attenders.</p>	<p>Antenatal Infection</p> <ul style="list-style-type: none"> Vaginal Infection (FGM 108/167 swabbed; No FGM 398/1990 swabbed). C. Albicans FGM = 28/108 (26%) No FGM = 16/398 (4%) H. streptococcus FGM = 8/108 7.1%) No FGM = 21/398 (5.1%) T. vaginalis FGM = 3/108 (3.0%) No FGM = 14/398 (8.5%) G. vaginalis FGM = 2/108 (1.2%) No FGM = 8/398 (2.%) 1 organism FGM = 12/108 (11%) No FGM = 25/398 (6%) <p>There was a significantly greater incidence of infection with candida in the FGM group at $p < 0.001$.</p> <p>There was a significantly greater incidence of vaginal infection caused by more than one organism at $p < 0.05$ in the FGM group.</p> <p>Urinary tract infection (Urine cultures performed - FGM 153/167 -No FGM 1691/1990)</p> <p>E. coli - FGM = 35/153 (23%) - No FGM = 23/1691 (1.1%)</p> <p>There was a significantly higher incidence of urinary infection in the FGM group at $p < 0.001$.</p> <p>Obstetric</p> <ul style="list-style-type: none"> Incidence of FGM by parity Primips 43/167 (77%) P1 - P4 106/167 (72%) P5 18/167 (82%) 	<p>Cross-sectional study (cases not matched, cofactors not discussed).</p> <p>All types of FGM represented.</p> <p>Outcomes not separated by type of FGM</p> <p>Good sample size.</p> <p>Statistical analysis using students t-test.</p> <p><i>Statistically significant</i> outcomes of FGM.</p> <p>Antenatal Infection</p> <ul style="list-style-type: none"> Urinary Vaginal <p>Obstetric complications</p> <ul style="list-style-type: none"> Prolonged Stage II labour in primips and multips. Episiotomy rate in primips and multips. Urethral tears in primips and multips. Increased PPH in primips and multips. Anterior episiotomy.

	<p>Method All patients examined in labour to assess FGM type and any vulval pathology.</p>		<ul style="list-style-type: none"> • Prolonged Labour Stage I > 12 hours (primips and multips) FGM+ 19/167 (11%) FGM- 238/1990 (12%) Stage II Primips > 90 minutes or multips > 60 mins. FGM+ 23/167 (14%) FGM- 86/1990 (4%) • Duration of labour Stage I > 12 hours FGM+ = 19/167 (11%) FGM- = 238/1990 (12%) Stage II Primips > 90 mins Multips > 60 mins FGM+ = 167 (14.8%) FGM- = 86/1990 (4%) • Forceps/Ventouse FGM+ = 12/167 (7%) FGM- = 86/1990 ((4%) • Caesarean section FGM+ = 7/167 (4.2%) FGM- = 96/1990 (4.8%) • PPH (postpartum haemorrhage) FGM+ = 9/167 (5%) FGM- = 31/1990 (12%) <p>There was a significant increase in duration of Stage II of labour and PPH incidence in group with FGM at $p < 0.001$.</p> <ul style="list-style-type: none"> • Episiotomy Primips FGM+ = 43/43 (100%) FGM- = 325/361 (90%) Multips FGM+ = 49/124 (40%) FGM- = 557/1533 (36%) 	<p>Neonatal</p> <ul style="list-style-type: none"> • Fetal asphyxia.
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			<ul style="list-style-type: none"> • 2nd degree tear <p>Primips FGM+ = (0%) FGM- = 13/361 (4%)</p> <p>Multips FGM+ = 11/124 (9%) FGM- = 14/1533 (1.9%)</p> <ul style="list-style-type: none"> • Urethral tear (? significant) <p>Primips FGM+ = 2/43 (5%) FGM- = 1/361 (0.3%)</p> <p>Multips FGM+ = 4/124 (3%) FGM- = (0%)</p> <ul style="list-style-type: none"> • Decircumcision in labour (anterior episiotomy) <p>Primips FGM+ = 39/43 (91%) FGM- = (0%)</p> <p>Multips FGM+ = 106/124 (85%)</p> <p>Significant increase in rates for episiotomy and urethral tears in the FGM group compared to the non-FGM group at $p < 0.05$.</p> <p>Neonatal</p> <ul style="list-style-type: none"> • Apgar score at 5 minutes <p>< 5 FGM+ = 9/167 (5%) FGM- = 48/1990 (2%) 6-10 FGM+ = 158/167 (95%) FGM- = 1942/1990 (98%)</p> <ul style="list-style-type: none"> • Stillbirths and early neonatal deaths <p>FGM+ = 40/167 (24%) FGM- = 31/1990 (16%)</p> <p>Significantly higher incidence of apgar score < 5 in neonates of FGM groups compared to non-FGM group at $p < 0.05$.</p> <p>Not extracted: Data on duration of stay in hospital or on age, parity distribution of FGM.</p>	
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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>EBONG, R.D. 1997</p> <p>Female circumcision and its health implications: a study of the Uruan Local Government Area of Akwa Ibom State, Nigeria.</p> <p>J. Roy. Soc. Health 1997 117 (2): 95-99</p>	<p>Questionnaires administered by a researcher and research assistant, translated into language that could be understood by participants.</p> <p>Akwa Ibom State, Nigeria</p> <p>N = 40/75 randomly selected villages in Uruen LGA (10 women per village).</p> <p>FGM Type II (clitoridectomy + surrounding tissue) very common in this area.</p> <p>Done within 28 days of birth, during childhood or in adulthood, most while in “fattening room” prior to marriage.</p> <p>Age of respondents: 55-65 years</p> <p>Most women in the study retired midwives or TBA’s.</p> <p>Those who do the operations are also often retired midwives or TBAs.</p>	<ul style="list-style-type: none"> • Respondents’ views on attributed benefits of FGM. • Respondents’ views on health hazards of FGM. 	<p>Health hazards of FGM</p> <ul style="list-style-type: none"> • Pain during labour from genital scarring: Yes: 70/400 (18%) No: 330/400 (82%) • Risk of infection. Yes: 120/400 (30%) No: 280/400 (70%) • Frustration and mental instability: Yes: 50/400 (13%) No: 350/400 (87%) • Profuse bleeding: Yes: 20/400 (5%) No: 380/400 (95%) • Prolonged labour causing still birth: Yes: 10/400 (3%) No: 390/400 (97%) <p>Not extracted: Review of policy developments on FGM in Nigeria.</p> <p>Characteristics of FGM operators 50% retired midwives 45% TBAs.</p>	<p>Survey of older women’s (many FGM operators) knowledge and attitudes of FGM.</p> <p><i>Suggests</i> sequelae of FGM: (although majority of respondents did not agree)</p> <p>Immediate</p> <ul style="list-style-type: none"> • haemorrhage • infection. <p>Obstetric</p> <ul style="list-style-type: none"> • Pain in labour due to scar tissue of genitalia • Still birth. <p>Psychosexual</p> <ul style="list-style-type: none"> • Frustration and mental instability. <p>FGM operators 50% retired midwives 45% TBAs.</p>

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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>EGUATA, V.E. and AGUGUA, N.E.N. 1981</p> <p>Complications of female circumcision in Nigerian Igbos</p> <p>British Journal of Obstetrics and Gynaecology 1981</p> <p>88: 1090 - 1093</p>	<p>Case series</p> <p>Cases presenting with post-circumcision complications at Paediatric Surgical Unit and Gynaecology Clinic at the University of Nigeria Teaching Hospital Enugu - January 1973 and December 1980.</p> <p>Study size: N = 58 N = 43 children under 3. N = 15 adult females (16-24 years)</p> <p>FGM Type I/II (clitoris, labia minora or both removed)</p> <p>Age at FGM: with 21 days of birth n = 57</p> <p>in the 7th month of 1st pregnancy n = 1</p> <p>Ethnic group: Igbo</p>	<p>Presenting history</p> <p>Clinical findings</p> <p>Histological confirmation of epidermoid cysts.</p> <p>Complications</p> <ul style="list-style-type: none"> • in young children. • in adults. • at delivery <p>Mean age at presentation.</p> <p>Age at circumcision.</p> <p>Reason for presentation.</p> <p>Not extracted: Treatment details of children's sequelae.</p>	<p>Reason for presentation: Labial occlusion: Complete - mean age 10 months. Partial - 5 years. Children N = 21 Adults N = 11 Total N = 32/58 = 56%</p> <p>Implantation dermoids Usually 5 years after FGM. Children N = 9 Adults N = 4 Total 13/58 = 22%.</p> <p>Urinary retention Children N = 12 Adults N = 1 Total N = 13/58 = 22%</p> <p>Urinary problems Complaint of poor urinary stenosis (2/15) = 13%</p> <p>Psychosexual Complaint of superficial dyspareunia and inadequate vaginal penetration at coitus N - 9/15 = 60% Complaint of primary infertility N = 6/15 = 40%</p>	<p>Suggests sequelae in adults</p> <p>Complications not specific to timing of FGM</p> <p>Obstetric prolonged labour</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • labial fusion • vulval stenosis • implantation dermoid cysts <p>Urinary problems poor stream</p> <p>Psychosexual</p> <ul style="list-style-type: none"> • dyspareunia • infertility • difficulty in penetration <p>Note: practice of FGM in 7th month of pregnancy, timing of FGM always needs to be known.</p> <p>Useful demographic data: Simple excision - Ibe Ugwu (In Igboland = removal of clitoris or labia minora or both) Sunna i.e. removal of prepuce of clitoris only rarely practised among Igbos.</p>

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<p>Eguata and Agugua (1981)</p>			<p>Gynaecological Complaint of vulval lump 4/15 = 27% Implantation dermoid cyst 4/15 = 27% Clinical finding: Complete labial fusion 1/15 (7%) Partial vulval stenosis 10/15 (67%)</p> <p>Obstetric Complaint of prolonged labour due to post circumcision vulval stenosis 2/15 (13%)</p> <ul style="list-style-type: none"> • Delivery aided by generous episiotomy • Elective anterior episiotomy necessary to avoid tears of circumcision scar. 	<p>Region FGM type/timing</p> <p>Ezeagu } Removal of labia Idemile } minora</p> <p>Orlu } Excision of Nkwerre } clitoris</p> <p>Abakaliki } FGM at puberty</p> <p>Ogbani } FGM in 1st month of 1st pregnancy.</p>

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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications																					
<p>EL DAREER 1982</p> <p>Woman, Why do you Weep?</p> <p>Zed Press, London</p> <p>(See also: El Dareer, A.1983 Tropical Doctor 13: 41-45 and 13: 131-33 International Journal of Epidemiology 12 (2) : 138-144)</p>	<p>Cross-sectional study.</p> <p>Multistage random sampling (full details not extracted).</p> <ul style="list-style-type: none"> Interviewers of both sexes, including a medical doctor, social workers, medical and other college students using detailed questionnaire. Additional information from the midwives (trained and untrained) and hospital visits to see hospital cases. <p>Area studied: five of the six former provinces of Northern Sudan.</p> <table border="1"> <thead> <tr> <th>Province</th> <th>Females</th> <th>Males</th> </tr> </thead> <tbody> <tr> <td>Khartoum</td> <td>782</td> <td>386</td> </tr> <tr> <td>Blue Nile</td> <td>1039</td> <td>502</td> </tr> <tr> <td>Kassala</td> <td>688</td> <td>325</td> </tr> <tr> <td>Kordufan</td> <td>338</td> <td>162</td> </tr> <tr> <td>Darfur</td> <td>363</td> <td>170</td> </tr> <tr> <td>Total</td> <td>N = 3210</td> <td>N = 1545</td> </tr> </tbody> </table> <p>Females N = 3210</p> <p>FGM type:</p> <p>FGM+ n = 3171</p> <p>FGM I (Sunna) n = 80/3210</p> <p>FGM II/III (intermediate) n = 386/3210</p> <p>FGM III (Pharaonic) n = 2636/3210</p> <p>FGM+ (unclassified) n = 69/3210</p> <p>FGM- n = 39</p> <p>Age at FGM: Most common at 6 - 8 years. Range: 7 days - 11 years.</p>	Province	Females	Males	Khartoum	782	386	Blue Nile	1039	502	Kassala	688	325	Kordufan	338	162	Darfur	363	170	Total	N = 3210	N = 1545	<ul style="list-style-type: none"> Operators and practices Sociocultural influences, including age, religion. Health Problems consequent upon FGM <ul style="list-style-type: none"> Immediate complications Delayed complications Hospitalised cases See also El Dareer, A.1983 Tropical Doctor: Complications of female circumcision. Circumcision and sexual relations Deinfibulation and reinfibulation includes - immediate complications <ul style="list-style-type: none"> - gynaecological - obstetric including abortion, vaginal bleeding - psychosexual. Attitudes towards circumcision (see also El Dareer, A. 1983 International Journal of Epidemiology 12 (2): 138-144) 	<p>Health problems consequent on FGM</p> <p>See El Dareer, A. 1983</p> <p>Complications of female circumcision in the Sudan for results of delayed complications of FGM.</p> <ul style="list-style-type: none"> Psychosexual “Circumcision and sexual relations”. Questions asked after rapport and trust built. <p>Married women (N not stated)</p> <p>Fearful of 1st sexual intercourse 81%</p> <p>FGM as main reason for fear 65.8% of 81%</p> <p>“not uncommon to find brides upset and anxious during first days of marriage”.</p> <p>Men</p> <p>Fearful of 1st sexual intercourse 13.4%</p> <p>FGM as main reason for fear 79% of 13.4%</p> <p>Time to penetration after marriage</p> <p>N not stated. Not stated if all women in the study were married.</p> <p>Women: reported time to penetration from survey</p> <p>1 - 2 weeks 52.6%)</p> <p>3 - 4 weeks 23.5%) FGM type not stated</p> <p>5 - 8 weeks 24%)</p> <p>18 months 3/3210 FGM Type III</p> <p>Men: reported time to penetration from survey</p> <p>< 1 week 75%)</p> <p>1 - 2 weeks 19.6%) FGM type not stated</p> <p>up to 9 weeks 5.4%)</p> <p>6 - 18 months 5/?1545 FGM Type III.</p>	
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	<p>Not extracted: Ethnic groups and tribal information, region by region, although extensive information given.</p>		<p>Penetration failure with FGM III from Survey Women: 7/?3210 Men: 5/?1545</p> <p>Anecdotes Woman: Married for 1 month, penetration failure, false vagina formation. Man: Described time to penetration as “not one minute” with FGM I (Sunna); FGM III up to 8 weeks and FGM II/III “somewhere in between”. Doctor: Describes woman presenting with infertility after more than six years of penetration failure.</p> <p>Defloration trauma Tears and bleeding in women from survey.</p> <ul style="list-style-type: none"> • Slight, considered ‘normal’ • Severe 6.2% needing medical attention Additional 2 cases severe but did not seek medical help due to shame. • Slight 31.9% • Denied problems with bleeding 59.1% <p>Anecdotes from midwife: 3 cases</p> <ul style="list-style-type: none"> • Husband cut bride almost to anus during attempted defibulation. • Large wound sustained by wife. As husband cut she jumped with pain. • Husband used acid on vulva in attempted defibulation. <p>Anecdotes from doctor</p> <ul style="list-style-type: none"> • 23 year old with FGM III sustained vesico-vaginal fistula from coital injury. • Woman defibulated by husband with razor. • Medical attention needed as result of severe pain and bleeding. 	
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			<p>From survey Female 13/3210 All males including husbands of above women denied using instruments to defibulate.</p> <p>Defibulation Performed at marriage as result of difficulty penetration 2% 66/3210 Performed for infertility (presumed as result of penetration failure 7/3210</p> <p>Lubricants used to aid penetration Men and women 5.5%</p> <p>Sexual pleasure Women Never experienced pleasure = 50% (of ? 3210) Totally indifferent = 23.3% (of ? 3210) Pleasurable altogether or only sometimes = 26% (of ? 3210)</p> <p>Men Stated they enjoyed sex and believed their wives did too.</p> <p>Psychosexual Not extracted: Customs regarding defloration by different regions/ethnic groups in Sudan.</p> <p>Obstetric “Defibulation (“anterior episiotomy”) must be done for all FGM II/III (intermediate) or FGM III (pharaonic)”</p> <p>From survey Defibulation 1038/3210 (32%)</p> <ul style="list-style-type: none"> • For abortion/vaginal bleeding 	
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			<p>Gynaecological Defibulation for menstrual problems Defibulation for infertility 7/3210 Defibulation for infection/vulvar abscesses 35/3210</p> <p>Not extracted: Reasons for reinfibulation and distribution of practice by age, residence, education standard. Complications of reinfibulation</p> <p>Attitudes towards circumcision (See annotation of El Dareer 1983) International Journal of Epidemiology 12(2):138-44</p>	
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<p>EL DAREER, A. 1983 (a)</p> <p>The epidemiology of female circumcision in the Sudan.</p> <p>Tropical Doctor 13 : 41 - 45 1983</p> <p>See also El Dareer, A. Woman, why do you weep? 1982 Zed Press, London</p>	<p>Cross-sectional study</p> <ul style="list-style-type: none"> • Multistage random sampling. • Interview N = 400 women. • Case reports N = 5 <p>Department of Community Medicine, University of Khartoum, Sudan.</p> <p>Interview area covered: Khartoum province Whole of White Nile</p> <p>All refused medical examination.</p> <p>Main ethnic groups: all Muslim.</p> <p>Gaaleen (18%) Berti (17%) Shukria (15%) Bagara (4%) Hosa (3%)</p> <p>Age at FGM: Mean 7 yrs Range 2 - 11 years</p> <p>Types of FGM: FGM III</p>	<ul style="list-style-type: none"> • Type of FGM • Age at FGM • Educational level • Age of respondents • Marital Status • Person performing FGM • Post-operative care • Reasons for decircumcision • Number with recircumcision. • Reasons for recircumcision • Complications of recircumcision • Mode of delivery • Reasons for agreeing/disagreeing with circumcision • Time to heal with each type of FGM • Case reports. 	<p>Reasons for decircumcision</p> <p>Immediate Urine retention 16/400 (4%)</p> <p>Gynaecological At menarche, difficulty passing menstrual blood 8/400 (2%)</p> <p>Psychosexual At marriage for penetration difficulties 6/400 (1.5%)</p> <p>Obstetric Anterior episiotomy for delivery 301/400 (75%) All deliveries : spontaneous vaginal with anterior episiotomy and for posterolateral.</p> <p>Psychosexual Fear of sexual intercourse 340/400 (85%) Fear of sex due to FGM 313/340 (92%)</p> <p>Case Reports = 5 Case 1: Repeated circumcision/FGM Type III Immediate complications Not extracted.</p> <p>Case 2: Repeated circumcision/FGM Type III Psychosexual FGM performed prior to marriage as FGM I had been performed in childhood. At marriage: tears and bleeding due to tight circumcision. Decircumcision performed on husband's request.</p>	<p>Area with all types of FGM</p> <p>Reported data only</p> <p><i>Suggests sequelae of FGM (mainly Type III)</i></p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual problems that may require decircumcision. • Urinary problems due to tight FGM. <p>Psychosexual</p> <ul style="list-style-type: none"> • Fear of 1st sexual intercourse due to FGM • Penetration difficulties • Coital injuries • Decircumcision at marriage <p>Obstetric All deliveries need:</p> <ul style="list-style-type: none"> • Anterior episiotomy • + Posterolateral episiotomy • Most recircumcised/reinfibulated

	<p>(Removal of whole of clitoris and labia minora and anterior two thirds of labia majora with obliteration of introitus with small opening posteriorly).</p> <p>FGM Type II = 44/400 (11%) (Intermediate: Removal of clitoris)and all or some of the labia minora. Sometimes slices of the labia majora are moved and stitched.</p> <p>FGM Type I = 4/400 (1%) (Sunna: removal of the tip of the prepuce of the clitoris).</p> <p>FGM Type O = 16/400 (4%).</p>		<p>Obstetric Recircumcision following deliveries as her mother refused to eat or drink until it was done.</p> <p>Case 3: FGM Type III Gynaecological Decircumcision needed at menarch due to obstructed outflow. Psychosexual Could not practice sex because of tight circumcision. Decircumcision performed by untrained midwife with razor.</p> <p>Obstetric Recircumcised after deliveries “so tight could not urinate”.</p> <p>Case 4: FGM Type III Immediate complications Not extracted. Obstetric Recircumcised after each delivery. Gynaecological Difficulty passing urine and decircumcision performed with razor.</p> <p>Case 5: FGM Type III Gynaecological Decircumcision needed at menarche due to obstructed outflow Dyspareunia Obstetric Recircumcision performed after each delivery. Psychosexual</p> <ul style="list-style-type: none"> • Recircumcision “to please husband” • No enjoyment of sex life • Never obtained “satisfaction” (i.e. ? no orgasm). • Dyspareunia <p>Summary of Case Reports FGM Type III</p>	
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			<p>Gynaecological Menstrual problems requiring decircumcision 3/5 (60%)</p> <p>Psychosexual FGM III performed prior to marriage 1/5 Coital injuries/decircumcision for penetration 2/5 Penetration difficulties 3/5 No sexual enjoyment 1/5 No sexual satisfaction 1/5 dyspareunia 1/5</p> <p>Obstetric Recircumcised after each delivery 4/5</p> <p>Not extracted: Age of respondents Marital status Person performing FGM Postoperative care Reasons for agreeing/disagreeing with FGM Healing time.</p>	
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<p>EL DAREER, A. 1983 (b)</p> <p>Complications of female circumcision.</p> <p>Tropical Doctor 13 : 131-133 1983</p> <p>See also El Dareer, A. Woman, why do you weep? 1982</p> <p>Zed Press, London (especially page 29).</p>	<p>Cross-sectional study</p> <ul style="list-style-type: none"> • Multistage random sampling. • Interviews by medical doctor or social worker or medical students/other college students. • Additional information from midwives (trained and untrained)/other hospital personnel. • Hospital visits to see complicated cases and interview <p>Questionnaire in two parts A) for all respondents B) for more co-operative respondents only (including information on personal sexual relationships).</p> <p>N = 3210 females</p> <p>Department of Community Medicine, University of Khartoum, Sudan</p> <p>Study area covered five of the six former provinces of Northern Sudan.</p>	<ul style="list-style-type: none"> • Type of FGM • Immediate complications • Delayed complications • Age of respondents • Educational level. 	<p>Delayed complications (long term)</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Painful scar or keloid tissue <table border="1"> <thead> <tr> <th>Type of FGM</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>FGM 0</td> <td>0/39</td> </tr> <tr> <td>FGM I</td> <td>0/80</td> </tr> <tr> <td>FGM II/III</td> <td>2/386</td> </tr> <tr> <td>FGM III</td> <td>9/2636</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Vulvar abscess <table border="1"> <thead> <tr> <th>Type of FGM</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>FGM 0</td> <td>0/39</td> </tr> <tr> <td>FGM I</td> <td>0/80</td> </tr> <tr> <td>FGM II/III</td> <td>15/386</td> </tr> <tr> <td>FGM III</td> <td>128/2636</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Implantation dermoid cyst (epidermal inclusion cyst) <table border="1"> <thead> <tr> <th>Type of FGM</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>FGM 0</td> <td>0/39</td> </tr> <tr> <td>FGM I</td> <td>0/80</td> </tr> <tr> <td>FGM II/III</td> <td>3/386</td> </tr> <tr> <td>FGM III</td> <td>16/2636</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Chronic pelvic infection <table border="1"> <thead> <tr> <th>Type of FGM</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>FGM 0</td> <td>3/39</td> </tr> <tr> <td>FGM I</td> <td>5/80</td> </tr> <tr> <td>FGM II/III</td> <td>28/386</td> </tr> <tr> <td>FGM III</td> <td>208/2636</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Menstrual problems <table border="1"> <thead> <tr> <th>Type of FGM</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>FGM 0</td> <td>0/39</td> </tr> <tr> <td>FGM I</td> <td>0/80</td> </tr> </tbody> </table>	Type of FGM	Number	FGM 0	0/39	FGM I	0/80	FGM II/III	2/386	FGM III	9/2636	Type of FGM	Number	FGM 0	0/39	FGM I	0/80	FGM II/III	15/386	FGM III	128/2636	Type of FGM	Number	FGM 0	0/39	FGM I	0/80	FGM II/III	3/386	FGM III	16/2636	Type of FGM	Number	FGM 0	3/39	FGM I	5/80	FGM II/III	28/386	FGM III	208/2636	Type of FGM	Number	FGM 0	0/39	FGM I	0/80	<p>Area with all types of FGM and frequencies of complications across all types.</p> <p><i>Suggests</i> sequelae of FGM mainly due to FGM Types II/III and FGM Type III</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Painful scar • Keloid scar • Vulvar abscess • Implantation dermoid cysts • Chronic pelvic infection • Menstrual problems (sometimes requiring defibulation) <p>Urinary</p> <p>Recurrent infection</p> <p>Psychosexual</p> <p>Difficulty in penetration, some cases requiring defibulation. Pain during intercourse.</p> <p>Methodology</p> <p>Difficult to get answers to questions about complications, either because unwilling to admit to them or because attributed (e.g. bleeding and infection) to Kabsa (the evil spirit) not to the FGM.</p> <p>Also complications were not reported unless very severe and long-continuing, and through fear of being asked the names of offenders (who could have been subjected to legal procedures).</p>
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	<p>Type of FGM: Number with FGM 3171/3210 (99%) FGM Type III 2636/3210 (82%) (N.B. Literature says 83%) (removal of whole clitoris, labia minora and whole or most of labia majora) FGM Type II/III 386/3210 (12%) (INTERMEDIATE: removal of clitoris, labia minora and parts of labia majora, stitched together with a variate opening sometimes like Pharaonic) FGM I 80/3210 (2.5%) (Sunna: Removal of tip of prepuce of clitoris only). FGM+ (unsure which type) 69/3210 (2%) FGM 0 39/3210 (1.2%) Age at FGM: usually 4 - 8 years</p>		<p>FGM II/III 3/386 FGM III 36/2636</p> <p>Of 39 respondents with difficulty with menstruation 17 needed to be de-circumcised.</p> <p>Urinary</p> <ul style="list-style-type: none"> Recurrent urinary tract infection <p>FGM 0 4/39 FGM I 7/80 FGM II/III 51/386 FGM III 225/2636</p> <p>Psychosexual</p> <ul style="list-style-type: none"> Difficulty in penetration <p>FGM 0 0/39 FGM I 0/80 FGM II/III 35/386 FGM III 196/2636</p> <p>Of 231 respondents with difficulty in penetration 66 required decircumcision.</p> <ul style="list-style-type: none"> Pain during intercourse <p>FGM 0 0/39 FGM I 0/80 FGM II/III 5/386 FGM III 51/2636</p> <p>Not extracted: Immediate complications.</p>	
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<p>EL DAREER, A. 1983 (c)</p> <p>Attitudes of Sudanese People to the practice of female circumcision.</p> <p>International Journal of Epidemiology 12 (2) : 138-144 1983</p> <p>See also Woman why do you weep? 1982 (See also El Dareer 1983a, b.)</p>	<p>Cross sectional study. Multistage random sampling (sampling stages not extracted) interview with detailed questionnaire (questions asked not extracted).</p> <p>N = 3210 females N = 1545 males</p> <p>Department of Community Medicine, University of Khartoum, Sudan</p> <p>Study area covered five of the six former provinces of Northern Sudan.</p> <p>Age at FGM: 4 - 8 years usually.</p>	<p>Females and Males</p> <ul style="list-style-type: none"> • Age of respondents • Education level • Occupation, and that of father and husband. • Religion • Approval of FGM by age, education, gender • Females preferred type often compared to respondents type of FGM • Reasons for approving/ ejecting preferred type of FGM by gender • Methods suggested for eradicating the practice • Preferred methods for eradication of circumcision • Reasons suggested for persistence of FGM <p>Females</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FGM I</th> <th 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(3%) Males 60/1545 (4%)</p> <p>Complications during marriage and labour: Females 282/3210 (9%) Males 30/1545 ((2%)</p> <p>Difficulties personally experienced: Females 120/3210 (4%) Males 0/1545</p> <p>Human rights and dignity of women: Females 90/3210 (3%) Males 45/1545 (3%)</p>	<p>Large cross-sectional study examines health beliefs about FGM as well as attitudes in general.</p> <p><i>Suggests</i> males do not understand terminology of FGM in same way as women therefore results may be misleading.</p> <p>Many males believed there were only two types of FGM “Pharaonic and Sunna”.</p> <p><i>Suggests</i> respondents health beliefs about FGM</p> <ul style="list-style-type: none"> • Cleanliness (males > females) • Greater sexual pleasure for male (males > females) • FGM Types I and II less harmful than FGM Type III.(males > females) • Greater fertility with FGM (males > females) • Fear of infertility as result of FGM • Complications of FGM during marriage and childbirth • Failure to achieve sexual satisfaction • <i>Suggests</i> complications of FGM have occurred in proportion of female respondents.
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		Males					
		FGM I	FGM II/III	FGM III	Any type		In Summary
	Religious demand	647/1545 (42%)	6/1545 (0.3%)	15/1545 (1%)	12/1545	Other: Females 54/3210 (2%) Males 15/1545 (1%)	Health beliefs re. FGM
	(1%)						Gynaecological
	Good tradition	178/1545 (12%)	11/1545 (1%)	167/1545 (11%)	14/1545 (1%)	Not extracted: Distribution of preferred types of FGM by age, gender, educational level.	<ul style="list-style-type: none"> • Infertility • Increased fertility
	Cleanliness	284/1545 (18%)	15/1545 (1%)	42/1545 (3%)	3/1545 (0.%)		Psychosexual
	Increased chance of marriage	31/1545 (2%)	6/1545 (0.3%)	14/1545 (1%)	2/1545 (0.%)	Methods suggested for eradicating FGM.	<ul style="list-style-type: none"> • Complications at marriage (females > males) • Female failure to achieve sexual satisfaction (males > females)
	Greater pleasure for husband	177/1545 (11%)	12/1545 (1%)	53/1545 (3%)	5/1545 (0.%)	Preferred methods for eradication.	
	Preservation of virginity and prevention of immorality	56/1545 (3%)	13/1545 (1%)	4/1545 (0.2%)	0		Obstetric
	Less harmful than Pharaonic	455/1545 (30%)	29/1545 (2%)	0	0	Reasons suggested for preservation of FGM.	Complications at labour females > males.
	Greater fertility	16/1545 (1%)	2/1545 (0.1%)	3/1545 (0.2%)	0		

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<p>ERIAN, M.M.S. GOH, J.T.W. 1995</p> <p>Female circumcision.</p> <p>Australian and New Zealand Journal of Obstetrics and Gynaecology 1995 35: 83-85.</p>	<p>Case reports and literature review.</p> <p>Cases = 3</p> <p>1. Somalian woman age 21 presented with severe dysmenorrhoea and dyspareunia. FGM Type III at age 14, treated in Australia.</p> <p>2. Sudanese woman age 28 presented at term in labour. FGM Type III at age 7. Seen in UK.</p> <p>3. Central African woman aged 23 presented because of unconsummated marriage.</p> <p>FGM at age 4, seen in UK.</p>	<p>1. Presented with severe dysmenorrhoea and dyspareunia.</p> <p>2. Presented at term in labour.</p> <p>3. Presented because of unconsummated marriage.</p>	<p>Menstrual</p> <ul style="list-style-type: none"> • pain • outflow obstruction. <p>Urinary</p> <ul style="list-style-type: none"> • outflow obstruction. <p>Obstetric problems</p> <ul style="list-style-type: none"> • Anterior episiotomy • Posterior episiotomy <p>Psychosexual problems</p> <ul style="list-style-type: none"> • Difficulty penetration. • Pain. 	<p><i>Suggests sequelae of FGM</i></p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual • Dysmenorrhoea • Outflow obstruction. <p>Obstetric</p> <ul style="list-style-type: none"> • Pregnancy in presence of pinhole introitus. • Obstructed delivery. • Episiotomies anterior and posterior. <p>Psychosexual</p> <ul style="list-style-type: none"> • Penetration difficulties. • Infertility. • Pain on intercourse.

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<p>GILLAN, R.U. 1929-1930</p> <p>Notes on the Kikuyu custom of Female Circumcision.</p> <p>Kenya and East African Medical Journal</p> <p>April - March 1929 - 1930 6: 199-203</p>	<p>Observational series. Relates to cases that the author has observed but no frequencies given.</p> <p>Kikuyu women, Church of Scotland Mission, Tumutumu, Kenya</p> <p>FGM Type III/II</p> <p>(The incision embraces the labia majora and clitoris and the intervening tissues are dissected off. The wound is washed daily so that the surfaces do not unite, but closure to a degree so as to seriously interfere with labour occurs in 10%).</p> <p>Age at FGM: usually about 12 years old.</p>		<p>Immediate complications. Sepsis - 1 case.</p> <p>Long term</p> <ul style="list-style-type: none"> • Urinary Dysuria - frequent. Vaginal calculus - 1 case. <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual Outflow obstruction Dysmenorrhoea Haematocolpos • Infertility Vaginal atresia. <p>Obstetric</p> <ul style="list-style-type: none"> • Episiotomy (Implied perineal tears/haemorrhage “employed in a very barbarous manner). • Episiotomy delayed inappropriately. Maternal death - 1 case. Still birth - 2 cases. “Some obstruction must take place in the majority of first labours.” <p>Psychosexual</p> <ul style="list-style-type: none"> • Dyspareunia - the most frequent complication for which advice is sought. - 50 cases seen per year. • Failure of penetration due to vaginal atresia. 	<p><i>Suggests sequelae of FGM II/III</i></p> <p>Immediate Infection.</p> <p>Longterm</p> <ul style="list-style-type: none"> • Urinary problems. • Dysuria - frequent. • Vaginal calculus. <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual Haemocolpos Dysmenorrhoea • Infertility. • Vaginal atresia. <p>Obstetric “The most serious”.</p> <ul style="list-style-type: none"> • Closure of a degree as to seriously interfere with labour occurs in 10% • Episiotomy • Perineal tears • Obstructed labour especially for majority of primips. • Still birth suggested especially for firstborn <p>Psychosexual</p> <ul style="list-style-type: none"> • Dyspareunia: the most frequent complication • Penetration difficult

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<p>HASSAN, A. 1995</p> <p>Sudanese women's struggle to eliminate harmful practices.</p> <p>Planned Parenthood Challenges. 2 : 17 - 22; 1995</p>	<p>Case reports:</p> <p>N = 3</p> <p>Review:</p> <p>Anthropology</p> <p>Health beliefs</p> <p>Sudan</p> <p>Age at FGM: - 6 years.</p> <p>FGM Type III.</p>		<p>Case Reports.</p> <p>Case 1. Sudanese man. Psychosexual.</p> <ul style="list-style-type: none"> • Fear and disgust at causing pain Increased sexual enjoyment post-defibulation <p>Case 2. Health worker</p> <p>Income from performing FGM.</p> <p>Case 3: Complications of FGM</p> <p>Gynaecological problems</p> <p>Menstrual problems</p> <p>Obstetric problems</p> <p>Infection post-partum</p> <p>Tetanus from genital wound.</p> <p>Maternal death</p> <p>Not extracted:</p> <p>Anthropological review</p>	<p><i>Suggests sequelae of FGM.</i></p> <p>Gynaecological</p> <p>Menstrual problems</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Infection post-partum. • Tetanus • Maternal death <p>Male psychosexual</p> <ul style="list-style-type: none"> • Fear at causing pain • Increased sexual enjoyment post-defibulation

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<p>HEZEKIAH, J. WAFULA, F. 1989</p> <p>Major Health Problems of Women in a Kenyan Village.</p> <p>Health Care for Women International 1980 10: 15-25.</p>	<p>Retrospective descriptive account of nature and costs of health services in a Kenyan village north-west of Nairobi.</p> <p>Interview of Kenyan nurse on her professional experience by Canadian nurse in Alberta.</p> <p>N: Unknown (not stated).</p> <p>Age at FGM: 12 - 16 years.</p> <p>FGM type: not stated.</p> <p>Ethnic group. Some Somali only a few tribes - some others in northern part of country.</p>	<ul style="list-style-type: none"> • Female circumcision. • Childbearing. • Malaria. • Nature and cost of health service needs to tackle these three most critical health problems faced by women in this village. 	<p>Review of practice of FGM, and treatment to reduce infections. (details not extracted).</p> <p>Complications</p> <p>Immediate States 20% of women of village studied admitted with anaemia following post-circumcision haemorrhage.</p> <p>Obstetric In circumcised women:</p> <ul style="list-style-type: none"> • Scar tissue has to be cut and the vaginal opening enlarged for delivery. • Lacerations, bleeding and sepsis may occur. <p>Mental health of the women.</p> <ul style="list-style-type: none"> • adverse effects (no details given). <p>Not extracted: Health services details on role of women.</p>	<p><i>Suggests sequelae of FGM.</i></p> <p>Immediate</p> <ul style="list-style-type: none"> • haemorrhage • anaemia <p>Obstetric</p> <ul style="list-style-type: none"> • Extra perineal cuts • Bleeding. • Perineal tears. • Infection. <p>Psychosexual</p> <ul style="list-style-type: none"> • Opening of vaginal orifice at hospital on her wedding night, or by husband. <p>No details of how data obtained.</p> <p>No details of numbers involved in study.</p>

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<p>HARRISON, K.A. 1983</p> <p>Obstetric Fistula: one social calamity too many.</p> <p>British Journal Obstetrics and Gynaecology 1983 Vol. 90 385-386</p>	<p>Review of studies of vesico vaginal fistula (VVF) patients Zaria, Northern Nigeria.</p> <p>Hausa and Fulani</p> <p>FGM Type IV (Gishiri cuts).</p>	<ul style="list-style-type: none"> • Frequency of VVF • Treatment for obstructed labour (Koranic medicine /Gishiri cuts). • Outcomes of Gishiri cuts. 	<p>Traditional treatment for obstructed labour:</p> <p>Gishiri cut (razor blade used to cut the vagina) which can result in:-</p> <ul style="list-style-type: none"> • fatal haemorrhage • sepsis • urinary and bowel fistulae • bladder and urethra divided • peritoneal cavity opened • fetal injury • stillbirth (as a result of obstructed labour) 	<p>Important information</p> <p>Timing of Gishiri cuts in obstructed labour.</p> <p>Practised by Hausa and Fulani <i>suggests sequelae of type IV FGM.</i></p> <p>Maternal</p> <ul style="list-style-type: none"> • haemorrhage • infection • injury to bladder and urethra <p>Fetal</p> <ul style="list-style-type: none"> • injury

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<p>KARIM, M. “Approx.” 1991</p> <p>Circumcisions and mutilations: male and female medical aspects.</p> <p>Unpublished ? dissertation held by WHO, Geneva</p> <p>P.O. Box 539 Maadi Cairo Egypt A published version, but omits anecdotal material.</p>	<ul style="list-style-type: none"> Review, (written as though has regular clinical experience, and refers to practices in many parts of the world from literature). <p>Egypt</p> <p>FGM as excision (Type II)</p> <p>FGM as infibulation (Type III)</p>		<p>? Source of information</p> <p>Psychosexual FGM I (Sunna) FGM II (excision).</p> <p>Some sensitive areas persist i.e. parts of clitoris, labia minora and vestibule in addition to pressure response of the vagina, so Satisfaction and pleasure sensation still found in 27% Type I and 33% Type II. Get orgasm: Type I = 48% Type II = 42%</p> <p>FGM III (infibulation). “Destruction of practically all the nerve endings in the outer organs which convey pleasurable sensations to the brain. She is left with the sensations from the vestibule at the vaginal orifice and the vagina itself whose nerve endings respond more to pressure than touch, and if she gets orgasm it is what is called “vaginal orgasm” in contrast to the more effective clitoral orgasm.” Needs secondary sex organ stimulation to give sex satisfaction/orgasm.</p>	<p>No primary data to support obstetric or psychosexual sequelae described although approximate percentages given</p> <p><i>Suggests sequelae of FGM</i></p> <p>Psychological and psychosexual disturbances. Type I</p> <ul style="list-style-type: none"> Sex phobia. May have deep psychological disturbances if done without anaesthesia or at an age where a girl can recall and compare her former sexual feelings and behaviour. Fear of sex as marriage approaches. Vaginismus after marriage preventing penetration Reduced/absent sexual desire because of phobia.. “May take weeks or months for woman to adjust and get confidence in herself”. Absence of satisfaction and anorgasmia. “The sex phobia may also lead to absence of desire, delay in arousal and disgust of the act”. <p>Type III</p> <ul style="list-style-type: none"> Extra physical and psychological trauma with FGM III. (See results column). <p>Obstetric complications may include: Type II</p> <ul style="list-style-type: none"> Rupture of anterior scar (“often”) Urethral tears Need for anterolateral episiotomy <p>Type III</p> <ul style="list-style-type: none"> Difficult vaginal examinations Genital/urinary infections Obstructed delivery Delay in 2nd stage of labour

			<p>Obstetric Delivery with excision (Type II) and infibulation (Type III)</p> <ul style="list-style-type: none"> • “Excision usually does not affect delivery until crowning of the head”. “Often” anterior scar gets overstretched and ruptures as head is delivered, endangering urethra. To avoid, if scar is stretched during crowning, an anterolateral episiotomy should be done, away from the urethra, and insertion of a catheter before repair. • Vaginal examination adds more problems. Difficult antenatally and during delivery/abortion. • Obstructed delivery in 2nd stage - head pressing on infibulation scar. • 2nd stage delay may lead on to fetal distress. • Head pressure on scar may lead to arrest of labour, rupture of scar, or uterine rupture. • Caesarean section “often” needed to avoid obstruction of tough keloid scar or adhesions and fibrosis. • Urinary problems and fistulae “common”. • Reinfibulation increases significantly complications in urinary tract infections. • Greater possibility infections genital/urinary tracts due to collection of secretions behind scar, local chronic irritation and inflammation. • Pelvic floor weaker and predisposes to prolapse. 	<ul style="list-style-type: none"> • Arrest of labour due to head pressing on scar. • Fetal distress. • Scar rupture • Fistulae • Uterine rupture • Need for Caesarean section because of tough scar (“Drmonu”) • Reinfibulation increases risk of sepsis and infections. • Prolapse. Weakened pelvic floor
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<p>LAYCOCK, H.T. 1950</p> <p>Surgical aspects of female circumcision in Somaliland</p> <p>East African Medical Journal 1950 27: 445-450</p>	<p>Observational series:</p> <p>Somali women seen in practice, Hareisha Hospital, Somaliland</p> <p>Complications recorded as case reports</p> <p>N = 9</p> <p>FGM Type III</p> <p>Age at FGM: 17 - 25 years</p> <p>Two had FGM at puberty</p>	<ul style="list-style-type: none"> • Often admitted for vaginal obstruction • “tumour” - dermoid cyst or lower abdominal mass; • gross oedema of vulva at 7 months pregnancy; • obstetric complications in labour 	<p>Chronic infection - 2 cases</p> <p>Pseudoelephantiasis of the vulva due to gross sepsis and lymphatic obstruction leading to thickened vulva and vaginal wall and vaginitis.</p> <p>Vaginal obstruction secondary to sepsis 2 cases both presented with cryptomenorrhoea and abdominal mass. One woman aged 20 years old, the other aged 17 years</p> <p>Obstetric complications -2 cases</p> <p>One 18 year old woman need defibulation to deliver fetal head</p> <p>One 20 year old woman had problems with prolonged labour vaginal stricture fetal death</p> <p>3 cases of defibulation complications at marriage: 1 rectal injury 2 of uterine prolapse</p> <p>Menstrual problems</p> <p>Haematocolpos: vaginal obstruction as presentation by unmarried girls with amenorrhoea, monthly abdominal pain and a lower abdominal mass, sometimes large.</p> <p>One case age 17 years, absolute amenorrhoea, another case of a single menstruation 3 years previously.</p>	<p><i>Suggests</i> sequelae of FGM</p> <p>Chronic infection</p> <ul style="list-style-type: none"> • <i>Suggests</i> FGM leads to lymphatic oedema • Mycetoma due to use of infected thorns <p>Urethral and vaginal injury</p> <p>Urinary problems</p> <ul style="list-style-type: none"> • Infection • Urethral stricture • Urine retention <p>Menstrual problems</p> <ul style="list-style-type: none"> • Vaginal obstruction • Haematocolpos/infrequent menstruation • Pain for 10 days each month <p>Obstetric complications</p> <ul style="list-style-type: none"> • Obstruction • Maternal and neonatal death <p>Postulated defibulation complications at the time of intercourse</p> <ul style="list-style-type: none"> • perineal laceration: • vaginal tears extending to anus may damage pelvic muscles and cause uterine prolapse <p>Psychosexual</p> <p>Difficulty in penetration because of very small size of introitus</p>

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<p>LISTER, U.G. 1960</p> <p>Obstructed labour; A series of 320 cases occurring in 4 years in a hospital in Southern Nigeria.</p> <p>Journal of Obstetrics and Gynaecology of the British Empire 1960 67 (1) : 188 -198</p>	<p>Case series.</p> <p>4 year period from 1953 - 1957</p> <p>All cases admitted in obstructed labour or developed obstruction to Adeoyo hospital, Nigeria.</p> <p>N = 320</p> <p>Ethnicity mainly Yorubas some Ibos</p> <p>FGM type: not stated; probably Type II.</p> <p>FGM Type IV (Insertion of native herbal pessaries. Used to restore menstrual function, treat threatened abortion or sterility).</p>	<p>Causes of obstructed labour:</p> <ol style="list-style-type: none"> 1. Cephalopelvic disproportion at the pelvic brim 2. Transverse lie 3. Fetus partially delivered on admission 4. Face and brow presentation 5. Compound presentation 6. Vaginal and cervical stonosis 7. Construction ring dystocia 8. Fetal abnormalities 	<p>Vaginal and cervical stenosis leading to obstruction.</p> <p>3 cases caused by insertion of native herbal pessaries = 2/3 (66%).</p> <p>Scarring from large untreated vesico-vaginal fistula 1/3 .</p> <p>States “Female circumcision is a common practice but the scarring was never severe enough to cause obstruction”.</p> <p>Not extracted: Distribution of other causes of obstructed labour.</p>	<p>Obstetrics sequelae suggests vaginal stenosis is a cause of obstructed labour.</p> <p>However, suggest female circumcision does <u>not</u> cause vaginal stenosis or obstructed labour and therefore:</p> <ul style="list-style-type: none"> • maternal death • uterine rupture • urinary complications. <p><i>Suggests</i> FGM Type I/II as performed widely in region does not lead to obstetric complications.</p> <p><i>Suggests</i> FGM Type IV leads to gynaecological</p> <ul style="list-style-type: none"> • vaginal stenosis • urinary complications <p>Obstetric</p> <ul style="list-style-type: none"> • obstructed labour • uterine rupture • maternal death <p><i>Suggests</i> FGM Type IV occurs in Southern Nigeria. Insertion of local pessaries to treat threatened abortion, sterility or restore menstrual function.</p>

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<p>MODAWI, O. 1972</p> <p>Maternity Services in Khartoum Civil Hospital. Part I General Review.</p> <p>Sudan Medical Journal 1972 10 (4) : 224-232</p>	<p>Observational series</p> <p>Description of Obstetrics Services in Khartoum Hospital, Sudan.</p> <p>FGM Type III/II. (either Pharaonic or Sunna)</p> <p>Age at FGM: usually childhood in Sudan</p>	<p>.</p>	<p>Obstetric complications of FGM.</p> <ul style="list-style-type: none"> • Decircumcision Necessary to deliver the head (no data given). • Haemorrhage Many cases of postpartum haemorrhage seen by writer due to unskilled delayed outcome of the circumcision incision in the presence of infection, congestion and granulation tissue. • Perineal sepsis (as above). <p>Not extracted: Details of staffing, maternal mortality, perinatal mortality, maternal health, baby health and birthweight.</p>	<p>Observations of obstetric sequelae of FGM.</p> <p>However, suggests FGM sequelae.</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Need for decircumcision to deliver fetal head and prevent perineal tears • Haemorrhage from genital wound • Infection from genital wound • Reports hospital maternal deaths 1968-1971 <p>Neonate data</p> <ul style="list-style-type: none"> • Reported birthweight, head, length, n = 525 from Ahmed Hospital 1968. • Reports hospital stillbirths and total births 1968 - 1971

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<p>McSWINEY, M.M. SAUNDERS, P.R.</p> <p>Female circumcision: a risk factor in post partum haemorrhage.</p> <p>J Postgrad Med. 1992 38 : 136-137</p>	<p>Case Report.</p> <p>Somali woman in Bristol, UK, admitted at 39 weeks gestation.</p> <p>N = 1</p> <p>Primip</p> <p>FGM Type III</p> <p>Age at FGM: in Somalia usually less than 10 years old</p>	<p>Labour induced and patient followed up for 1 week.</p>	<p>Obstetric complications</p> <p>Primip.</p> <ul style="list-style-type: none"> • Fetal distress • Instrumental delivery • Anterior episiotomy not done • Posterior episiotomy performed • Haemorrhage from vaginal and perineal tears (estimated blood loss 6 litres) • Intubated and anaesthetised. • Required intensive care for 24 hours <ul style="list-style-type: none"> - 7 units of blood - 5 units of fresh frozen plasma - 2.5 l of gelatin colloid. 	<p><i>Suggests</i> obstetric sequelae of FGM.</p> <ul style="list-style-type: none"> • post partum haemorrhage • Quotes Verzin 1975 to suggest need for anterior and posterior episiotomy to prevent/reduce perineal tears which may bleed excessively

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<p>MAWAD N. M. HASSANEIN O. M. 1994</p> <p>Female circumcision: Three years experience of common complaints in patients treated in Khartoum teaching hospitals</p> <p>Journal of Obstetrics and Gynaecology 1994 14 (1) : 40 - 43</p>	<p>Case Series</p> <p>All patients presenting at Khartoum North Hospital over three years 1987-1989 inclusive with complications of female circumcision acute and late</p> <p>N=934 (7% of total gynaecological and obstetric operations N = 13 768)</p> <p>Excludes any gynaecological cases managed by a urologist, surgeon or medical practitioner in a health centre.</p> <p>Notes many reluctant to seek hospital treatment and only came when experienced severe pain.</p> <p>FGM Type not specified - Probably III (Excision of clitoris labia minora and internal parts of labia majora followed by suturing leaving a small finger sized introitus)</p> <p>Reports all (100%) patients delivered by author had FGM</p>		<p>Operations to treat direct complications of female circumcision</p> <ul style="list-style-type: none"> • Defloration haemorrhage and trauma repairs 41/934 (4.4%) (some cases requiring resuscitation) • Post coital injury or post natal circumcision repairs 312/934 (33%) • Perineal tears 80/934 (9%) • Need for revision of tight circumcision/decircumcision 38/934 (4%) • Vulval swelling = 463/934 = 50% (including infected cysts and abscesses commonly along FGM scars particularly in age range 12 - 20 years, fibromata, granulations) <p>Cause of urogenital infection in FGM is vulval skin diaphragm that maintains blind space around urethra and vagina</p> <p>Not extracted: acute complications or details of treatment, yearly breakdown of cases, history of FGM legislation in Sudan</p>	<p>States that it is FGM Type III which has severe medical complications No comparative data</p> <p><i>Suggested sequelae</i></p> <p>Long term complications Gynaecological</p> <ul style="list-style-type: none"> • Urinary tract infection and genital tract infection both common in children and adolescents • Vulval swellings (cysts, fibromata, granulosa) • Decircumcision/revision of tight circumcision (reasons not given) <p>Obstetric sequelae</p> <ul style="list-style-type: none"> • vulval trauma due to perineal injury frequent (usually following home delivery) • post partum wound infection common because of collection of blood and lochia behind skin diaphragm resulting in poor hygiene in vestibule • complications avoided by full antenatal, intrapartum and post-partum care • Delayed labour, obstructed labour, fetal loss, fetal brain damage, fistulae or perineal sepsis not seen <p>Psychosexual</p> <ul style="list-style-type: none"> • Defloration trauma and haemorrhage (sometimes with shock due to blood loss) • Postcoital trauma and haemorrhage; injury to vestibule and sometimes vagina • Fear of sex • Dissatisfaction with sexual intercourse • Postcoital trauma when reinfibulated • FGM scar <p>Psychosexual methodology A large number of patients reluctant to answer questions about their sexual experiences or private life</p>

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<p>MUHAMMED, H.M. 1996</p> <p>Obstetric fistulae as seen at Dodoma Regional Hospital, TANZANIA.</p>	<p>1. All patients seen at main regional referral centre, Dodoma Hospital (5000 deliveries per annum) with obstetric fistulae, in four years 1990, 1993, 1994, 1995 N = 92.</p> <p>2. All primips delivering January - July 1995 N = 1126 FGM+ = N = 570 FGM- = N = 556</p> <p>Ethnic groups</p> <ul style="list-style-type: none"> Wagogo people. FGM Type II (excision). Some Somali women FGM Type III (infibulation) <p>FGM “widely practised in Dodoma region”.</p> <p>(Dodoma is one of the areas campaigning against FGM).</p>	<ul style="list-style-type: none"> Age distribution Parity distribution Height distribution Aetiology and mode of delivery Aetiology FGM and vesico-vaginal fistulae (VVF) FGM and mode of delivery Other pathology concurrent with the fistula Operative results Post operative complications Estimate incidence of fistulae in total population 	<p>FGM and VVF FGM+ 77/92 (84%) FGM- 15/92 (16%)</p> <p>FGM and mode of delivery in primips (Jan - July 1995).</p> <table border="0"> <tr> <td>Spontaneous vaginal delivery with episiotomy</td> <td>Spontaneous vaginal delivery with intact perineum</td> <td>Spontaneous vaginal delivery with a tear</td> </tr> <tr> <td>FGM+ $\frac{429}{570}$ (75%)</td> <td>$\frac{88}{570}$ (15%)</td> <td>$\frac{15}{570}$ (3%)</td> </tr> <tr> <td>FGM- $\frac{393}{556}$ (71%)</td> <td>$\frac{113}{556}$ (22%)</td> <td>$\frac{16}{556}$ (23%)</td> </tr> </table> <p>Caesarean section</p> <table border="0"> <tr> <td>FGM+ $\frac{29}{570}$ (5%)</td> <td>Instrumental delivery $\frac{9}{570}$ (1.6%)</td> </tr> <tr> <td>FGM- $\frac{28}{556}$ (5%)</td> <td>$\frac{6}{556}$ (1.1%)</td> </tr> </table> <p>Concludes no significant difference between mode of delivery for FGM and no-FGM groups.</p> <p>Parity 59% para 1 (54/92) 14% para 5+ (13/92)</p> <p>Height < 150 cm 66/92 (72%) 150 cm+ 26/92 (28%)</p> <p>Fistula age distribution < 18 years 3 (3%) 18-25 63 (68%) 25+ 26 (28%) Total 92 (100%)</p> <table border="0"> <tr> <td>Intact perineum</td> <td>Episiotomy or tear</td> <td>Epis/tear/CS/ID</td> </tr> <tr> <td>FGM + $\frac{88}{570}$ (15%)</td> <td>444/570 (78%)</td> <td>482/570 (84%)</td> </tr> <tr> <td>FGM- $\frac{113}{556}$ (22%)</td> <td>409/556 (73%)</td> <td>443/556 (79%)</td> </tr> </table>	Spontaneous vaginal delivery with episiotomy	Spontaneous vaginal delivery with intact perineum	Spontaneous vaginal delivery with a tear	FGM+ $\frac{429}{570}$ (75%)	$\frac{88}{570}$ (15%)	$\frac{15}{570}$ (3%)	FGM- $\frac{393}{556}$ (71%)	$\frac{113}{556}$ (22%)	$\frac{16}{556}$ (23%)	FGM+ $\frac{29}{570}$ (5%)	Instrumental delivery $\frac{9}{570}$ (1.6%)	FGM- $\frac{28}{556}$ (5%)	$\frac{6}{556}$ (1.1%)	Intact perineum	Episiotomy or tear	Epis/tear/CS/ID	FGM + $\frac{88}{570}$ (15%)	444/570 (78%)	482/570 (84%)	FGM- $\frac{113}{556}$ (22%)	409/556 (73%)	443/556 (79%)	<p>Prevalence of FGM not stated but “widely practised”.</p> <p>Type of FGM not stated but inferred from known practice.</p> <p>Ethnic groups in study not stated (those found in hospital area supplied by author’s colleague).</p> <p>Type of FGM and VVF not stated (inferred from usual practices in group identified by author’s colleague).</p> <p>Duration of stages of labour in cases with FGM/without FGM not stated or compared.</p> <p>States “type of FGM in Dodoma is not a contributory factor in genesis of obstetric fistulae”.</p>
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<p>MUSTAFA, A.M. and ERWA, H.H. 1972</p> <p>Significant Bacteriuria in Pregnancy: A Study in Khartoum, SUDAN.</p> <p>Ulster Medical Journal 1972 Vol. 41 : p161-162.</p>	<p>Cross sectional study.</p> <p>Incidence of significant bacteruria in antenatal patients admitted to Khartoum Hospital during the year 1971, Sudan.</p> <p>Catheter specimens of urine obtained from antenatal patients: sent for microscopy and culture, examined within two hours of investigated collections</p> <p>Bacteruria defined as 10^5 or more E.coli per ml in two or more consecutive daily specimens of urine.</p> <p>N = 550. N = 500 reported.</p> <p>FGM Type III</p> <p>Age at FGM: around 7 years.</p> <p>Vast majority in this series had FGM.</p>		<p>5.6% i.e. 31/500 patients had significant bacteruria in Sudan</p> <p>4.7% antenatal patients had significant bacteruria in Ireland.</p>	<p>Concludes neither FGM nor hot climate has effect on incidence of significant bacteruria in pregnancy.</p> <p>Pathology urine collection with FGM present (FGM Type III). Midstream specimen impossible. High degree of contamination likely to occur, so catheter used.</p> <p>Catheter specimen of urine taken. No mention of difficulty of catheterisation of patients with FGM, as was mentioned in previous reports.</p>

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<p>MODAWI, S. 1974</p> <p>The Impact of Social and Economic Changes in Female Circumcision.</p> <p>Sudan Med Assoc Congress Series 1974 (1) 242-245</p>	<p>Three separate case series: 1960, 1965, 1970</p> <p>To examine effects of social and cultural changes on the type of operation and its complications.</p> <p>Analysis of case records from private clinics in Khartoum and Medani, Sudan, extracted from records of 30,000 patients since 1955</p> <p>N = 1000 1960-61 (Khartoum) N = 1000 in 1965 (Medani) N = 1000 in 1970 (Khartoum)</p> <p>Age at FGM: 5 - 8 years.</p> <p>Type of FGM Type I: Sunna. Excision of clitoris</p> <p>Type II/III. Modified Sunna: Excision of clitoris and upper parts of labia majora with some narrowing of the introitus, labia majora preserved.</p> <p>Type III: Pharaonic: Excision of clitoris, labia minora and labia majora with infibulation</p>	<ul style="list-style-type: none"> • Cases per age group • Types of FGM, Northern Sudan • Complications of FGM • Economic growth per capita • Education of girls age 25-30 years • Medical Staff • Nationality • Types of operation by nationality 	<p>Types of FGM in Northern Sudan (1970) Uncircumcised: 0 (but reports “we have information to the effect that a big number of girls below the marriage age are not circumcised or had Sunna only”).</p> <table border="1"> <thead> <tr> <th></th> <th>1960</th> <th>1965</th> <th>1970</th> </tr> </thead> <tbody> <tr> <td>Sunna (FGM I)</td> <td>2/870 (0.2%)</td> <td>3/955 (0.3%)</td> <td>7/701 (0.9%)</td> </tr> <tr> <td>Modified Sunna</td> <td>124/870 (14%)</td> <td>514/955 (54%)</td> <td>405/701 (58%)</td> </tr> <tr> <td>Pharaonic FGM III</td> <td>738/870 (85%)</td> <td>428/955 (45%)</td> <td>282/701 (40%)</td> </tr> </tbody> </table> <p>Complications of FGM Gynaecological</p> <ul style="list-style-type: none"> • Keloid scarring: No case seen in series. • Retention cysts (- ? Implantation Dermoid Cysts: 8 cases. • Modura (thorns introduce mycetoma infection. <p>Psychological problems</p> <ul style="list-style-type: none"> • ? Shyness • ? Inferiority complex <p>Not extracted: History of FGM to 200 BC, History in Sudan</p> <p>Complications of marriage Penetration problems False vagina formation: 2 cases.</p>		1960	1965	1970	Sunna (FGM I)	2/870 (0.2%)	3/955 (0.3%)	7/701 (0.9%)	Modified Sunna	124/870 (14%)	514/955 (54%)	405/701 (58%)	Pharaonic FGM III	738/870 (85%)	428/955 (45%)	282/701 (40%)	<p><i>Suggests</i> pattern of FGM Type performed changing in Sudan.</p> <p><i>Suggests</i> complications seen in 1970 as a result of FGM less than in 1960. Could just be due to FGM III. No breakdown of FGM Type <i>Suggests</i> sequelae of FGM:</p> <p>Immediate</p> <ul style="list-style-type: none"> • Haemorrhage • Tissue injury • Infection • Urine retention <p>Longterm Gynaecological</p> <ul style="list-style-type: none"> • Scarring • Vulvar abscess/cyst • Injuries resulting from attempted defibulation by husband <p>Longterm Psychosexual</p> <ul style="list-style-type: none"> • Penetration difficulties • Coital injuries • Tight Circumcision • False vagina formation • Urethral coitus • Anal intercourse • Dyspareunia: pains and sufferings through the sexual act • Lessened sexual pleasure • “Excessive sexual taboos and false frigidity” • Vaginismus <p>Obstetric complications</p> <ul style="list-style-type: none"> • Antenatal infections • Urine retention during labour. • Delay in labour. • Obstruction • Need for anterior episiotomy.
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		<p>Urethral coitus: 1 case. Anal intercourse. Tight circumcision: 23 cases. Coital injuries. Extensive tearing due to forcible penetration: 4 cases.</p> <p>Infertility Sometimes due to penetration difficulties; may be a sequelae of infection.</p> <p>Psychosexual Dyspareunia Woman's sense of sexual gratification: lessened. Increased sexual desire: Imperfect satisfaction.</p> <p>Obstetric complications Pregnancy without penetration: pinhole introitus in labour. Infection: cystitis vaginitis Fear of labour. Retention of urine in labour, difficulty in passing catheter. Obstruction to labour due to stenosis and scarring/failure to perform anterior episiotomy. Perineal tears: common and sometimes extensive. Cases actually seen: Infected episiotomy: 4 cases.</p> <p>Not extracted: Immediate/early complications Other outcome measures.</p>	<ul style="list-style-type: none"> • Perineal tears. • Infected episiotomy • Episiotomy takes long time to heal • Recircumcision • Vesico-vaginal rectovaginal fistulae due to obstruction.
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<p>McCLEARY P. H. 1994</p> <p>Female genital mutilation and childbirth</p> <p>A case report</p> <p>Birth 1994</p> <p>21 : 221 - 223</p>	<p>Case Report N = 1</p> <p>Somali woman in Toronto, Canada Aged 25yrs, primip.</p> <p>FGM Type III (labia minora and clitoris absent and the labia majora completely fused from the mons pubis to the perineum) presented at twelve weeks pregnant</p> <p>Age at FGM: not stated, usually childhood in Somalia.</p>	<p>Followed to 6 weeks post partum.</p>	<p>Presented at twelve weeks pregnant. Never had intercourse Ejaculation had occurred on vulva On examination: pinhole introitus Fears i.e. intercourse, delivery. Antenatal defibulation at 22 weeks gestation using laser vaporisation. Normal vaginal delivery Mediolateral episiotomy</p> <p>Not extracted: details of treatment.</p>	<p>Highlights need for research on extreme fear of pain with intercourse and possible delivery problems.</p> <p>Obstetric</p> <p>Antenatal</p> <ul style="list-style-type: none"> • pregnant in the presence of a pinhole introitus • antenatal fears about delivery. <p>antenatal defibulation performed</p> <p>Labour and delivery</p> <ul style="list-style-type: none"> • episiotomy necessary because scarred tissue of perineum had lost its elasticity • anterior episiotomy not needed because of antenatal laser vaporisation <p>Psychosexual</p> <ul style="list-style-type: none"> • Fear of pain with intercourse: “terrified of the idea of forcing intercourse with such a small opening”

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<p>McCAFFREY, M JANWSKA, A GORDON, H 1995</p> <p>Management of female genital mutilation: the Northwick Park Hospital experience</p> <p>and McCAFFREY, M. JANWSKA, A, GORDON, H.</p>	<p>Review of FGM. Review at six month period at Northwick Park Hospital African Well Woman Clinic. All attenders.</p> <p>N = 50</p> <p>Case reports n = 2</p> <p>FGM Type III (all infibulated)</p> <p>Age at FGM: Most commonly at 7 years</p> <p>Ethnicity of women in series not stated, refers to Somali and Sudanese women</p>	<ul style="list-style-type: none"> • Parity • Age at attendance • Adequacy of introitus for intrapartum care and delivery • Type of delivery • Obstetric problems • Psychosexual problems • Case reports 	<p>Parity Nullips attending for defibulation 13/50 (never pregnant) Primips (pregnant now) 14/50 Multips 23/50</p> <p>Adequacy of introitus for intrapartum care and delivery. Primips 7/14 adequate 7/14 inadequate (pinhole introitus) 2/7 antenatal defibulation 3/7 intrapartum defibulation Multips 23/23 adequate</p> <p>Type of delivery Primips: Normal vaginal delivery 13/14 Perineal tears or episiotomy 14/14 Serious tears 0/14</p> <p>Multips: Normal vaginal delivery 14/23 Instrumental delivery 3/23 Caesarean section 6/23</p> <p>Obstetric problems Case 1. Sudanese woman</p> <ul style="list-style-type: none"> • 26 weeks pregnant • pinhole introitus • severe candidiasis • antenatal speculum examination not possible • treatment with vaginal pessaries not possible • antenatal defibulation performed • subsequent normal vaginal delivery 	<p>Unclear which type of FGM related to which complication.</p> <p><i>Suggests sequelae of FGM.</i></p> <p>Obstetric</p> <ul style="list-style-type: none"> • Introitus too small for vaginal examination. • Urethral catheterisation difficult. • Defibulation may be necessary prior to second stage of labour <p>Psychosexual</p> <ul style="list-style-type: none"> • Request for defibulation in nullips (i.e. never pregnant women)

			<p>Case 2. Somali woman</p> <ul style="list-style-type: none">• admitted at term in labour• pinhole introitus• fetal distress (deceleration of fetal heart rate to 60bpm without a contraction)• epidural anaesthesia to facilitate vaginal examination• thick meconium following artificial rupture of membranes• urethral catheterisation not possible due to defibulation• Emergency caesarean section for fetal distress <p>Psychosexual Requesting defibulation 13/50</p>	
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<p>ODOI, BRODY and ELKINS (1997)</p> <p>Female genital mutilation in rural Ghana, West Africa</p> <p>International Journal of Gynecology and Obstetrics 1997 56: 179 - 180</p>	<p>Cross sectional study</p> <p>Consecutive women attending a rural antenatal clinic over 2 days in North East Ghana, represented by nine tribes, three of which known to practice FGM</p> <p>Personal interviews N = 195 Examination of FGM extent/type N = 12.</p> <p>Results of examination FGM Type I/II</p> <p>Results of interview 76/195 had undergone FGM (39%) 119/195 not had FGM (61%)</p> <p>Age at FGM: Early childhood to 18 years Most women in sample had FGM from early childhood to 12 years</p> <p>Ethnic groups performing FGM from Female circumcision in Ghana, extent of the problems; effects on sexual function (Odoi)</p> <p>Kusasi 27/76 (35%) Moshi 23/76 (30%) Busanga 15/76 (20%) Mamprusi 6/76 (8%) Others 5/76 (7%)</p>	<p>Personal interviews and examination N = 12</p> <p>Sexual impairment</p> <ul style="list-style-type: none"> Persistent post-coital bleeding; dyspareunia/and/or anovagismia. <p>Obstetric complications with first delivery.</p> <p>Not extracted: Intentions for FGM Intention for FGM for own children.</p>	<p>Psychosexual Persistent dyspareunia FGM+ = 10/76 = (13%) FGM- = 6/119 = (5%)</p> <p>Anorgasmia FGM+ = 9/76 = (12%) FGM- = 0/119 = (0%)</p> <p>Persistent post-coital bleeding FGM+ 4/76 = (5%) FGM- 0</p> <p>Obstetric complications with first delivery FGM+ 20/76 = (26%) FGM- Not specified.</p> <p>Episiotomy FGM+ = 6/76 = (8%) FGM- = Not specified.</p> <p>Age of FGM Early childhood to 12 years (young children) = 58/76 (76%) adolescent = 9/76 (12%) young adult = 1/7 (13%)</p>	<p>Commentary</p> <p>Unmatched groups of varying ethnicity 39% FGM I/II 61% FGM 0</p> <p>No information on obstetric problems in non-FGM group.</p> <p>Implications Suggestive important psychosexual outcomes.</p> <ul style="list-style-type: none"> doubling dyspareunia 12-fold increase anorgasmia 5-fold increase in post-coital bleeding. <p>Possibly suggestive increase in obstetric complications.</p> <ul style="list-style-type: none"> laceration/haemorrhage and episiotomy.

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<p>ODUJINRIN, AKITOYE OYEDIRAN (1989)</p> <p>A study on female circumcision in Nigeria</p> <p>West African Journal of Medicine 1989 8 (3): 183-192</p>	<p>Randomly selected women attending family planning clinic of Dept. Community Health clinic of University of Lagos from Feb.- Sept. 1984.</p> <p>Interview and clinical examination during clinic visit.</p> <p>Ethnic group</p> <table border="0"> <tr> <td>Mostly Yoruba</td> <td>128/181</td> <td>71%</td> </tr> </table> <p>Also</p> <table border="0"> <tr> <td>Edo,</td> <td>30/181</td> <td>17%</td> </tr> <tr> <td>Ibo,</td> <td>18/181</td> <td>10%</td> </tr> <tr> <td>Efik,</td> <td>5/181</td> <td>3%</td> </tr> </table> <p>Age</p> <table border="0"> <tr> <td>Mostly aged 25 - 44</td> <td>153/181</td> <td>85%.</td> </tr> </table> <p>Study size:</p> <p>N = 181 interviewed N = 102 examined</p> <p>By evidence of FGM examination:</p> <table border="0"> <tr> <td>FGM+ Yomba</td> <td>(48/67)</td> <td>72%</td> </tr> <tr> <td>Edo</td> <td>(18/23)</td> <td>78%</td> </tr> <tr> <td>Ibo</td> <td>(10/11)</td> <td>91%</td> </tr> <tr> <td>Efik</td> <td>(1/1)</td> <td>100%</td> </tr> <tr> <td>Total</td> <td>77/102</td> <td>76%</td> </tr> </table> <p>FGM-</p> <table border="0"> <tr> <td>Yomba</td> <td>19/67</td> </tr> <tr> <td>Edo</td> <td>5/23</td> </tr> <tr> <td>Ibo</td> <td>1/11</td> </tr> <tr> <td>Total</td> <td>25/102 24%</td> </tr> </table>	Mostly Yoruba	128/181	71%	Edo,	30/181	17%	Ibo,	18/181	10%	Efik,	5/181	3%	Mostly aged 25 - 44	153/181	85%.	FGM+ Yomba	(48/67)	72%	Edo	(18/23)	78%	Ibo	(10/11)	91%	Efik	(1/1)	100%	Total	77/102	76%	Yomba	19/67	Edo	5/23	Ibo	1/11	Total	25/102 24%	<p>Examination of circumcision status and extent by ethnic group.</p> <p>Opinions on side effects</p> <p>Not extracted:</p> <ul style="list-style-type: none"> • Education level, occupations and FGM. • Awareness of associated side effects • Rationale for circumcision. • Circumcision status of own mother and female children. • Detailed types of circumcision by ethnic group • Continuation of circumcision • Immediate side effects 	<p>Knowledge of obstetric effects</p> <p>Awareness of difficulties in childbirth</p> <table border="0"> <tr> <td>Yes</td> <td>27/181</td> <td>15%</td> </tr> <tr> <td>No</td> <td>122/181</td> <td>67%</td> </tr> <tr> <td>Don't know</td> <td>32/181</td> <td>18%</td> </tr> </table> <p>Knowledge that FGM could lead to sexual dissatisfaction</p> <table border="0"> <tr> <td>Yes</td> <td>35/181</td> <td>19%</td> </tr> <tr> <td>No</td> <td>117/181</td> <td>65%</td> </tr> <tr> <td>Don't know</td> <td>29/181</td> <td>16%</td> </tr> </table> <p>Age at FGM:</p> <table border="0"> <tr> <td>Infant (Many Yoruba & Ibo)</td> <td>78%</td> </tr> <tr> <td>Puberty</td> <td>16%</td> </tr> <tr> <td>Adults (mostly Edo)</td> <td>6%</td> </tr> </table> <p>Experience of these complications</p> <table border="0"> <tr> <td>0/181</td> <td>0%</td> </tr> </table> <p>Ethnic group and self-reported frequency of FGM</p> <table border="0"> <tr> <td>Edo</td> <td>23/30</td> <td>77%</td> </tr> <tr> <td>Ibo</td> <td>11/18</td> <td>61%</td> </tr> <tr> <td>Yoruba</td> <td>67/128</td> <td>52%</td> </tr> <tr> <td>Efik</td> <td>1/5</td> <td>20%</td> </tr> </table> <p>Ethnic group and extent of evident FGM</p> <table border="0"> <tr> <td></td> <td>Yoruba</td> <td>Edo</td> <td>Efik</td> </tr> <tr> <td>FGM Type I</td> <td>23/67</td> <td>4/23</td> <td>1/11 (clitoris only)</td> </tr> <tr> <td>FGM Type II (clitoris and labia minora)</td> <td>1/67</td> <td>6/23</td> <td>5/11</td> </tr> <tr> <td>FGM Type ?IV</td> <td>16/67</td> <td>0</td> <td>0 (labia minora only)</td> </tr> <tr> <td>FGM Type ?III (labia majora only)</td> <td>5/67</td> <td>0</td> <td>0</td> </tr> <tr> <td>FGM Type ?III (labia minora and labia majora)</td> <td>3/67</td> <td>2/23</td> <td>1/11</td> </tr> </table>	Yes	27/181	15%	No	122/181	67%	Don't know	32/181	18%	Yes	35/181	19%	No	117/181	65%	Don't know	29/181	16%	Infant (Many Yoruba & Ibo)	78%	Puberty	16%	Adults (mostly Edo)	6%	0/181	0%	Edo	23/30	77%	Ibo	11/18	61%	Yoruba	67/128	52%	Efik	1/5	20%		Yoruba	Edo	Efik	FGM Type I	23/67	4/23	1/11 (clitoris only)	FGM Type II (clitoris and labia minora)	1/67	6/23	5/11	FGM Type ?IV	16/67	0	0 (labia minora only)	FGM Type ?III (labia majora only)	5/67	0	0	FGM Type ?III (labia minora and labia majora)	3/67	2/23	1/11	<p>Note: 56% claimed to have had FGM but 25% had no evidence of it.</p> <p>No quantification of sexual dissatisfaction.</p> <p>Low knowledge of late obstetric side effects compared with knowledge of immediate bleeding/severe infection at time of FGM</p> <p>No breakdown by FGM groups.</p> <p>Note variation in self-reported and examined frequency of FGM.</p> <p>Implications</p> <p>Suggests need to examine women for extent of FGM. Self-reporting is insufficiently accurate. Under-reporting (N=3) and over-reporting occurring (extensive).</p> <p>Suggestive information of sexual dissatisfaction (not specified) and difficulties in childbirth (not specified).</p> <p>Important to know when FGM occurred since some occurs in adults in Nigeria and (known from other studies) FGM may be done in pregnancy.</p> <p>None of the 181 had experienced the complications themselves.</p>
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<p>PHILP, H.R.A. 1927-28</p> <p>Vesical Fistula Complicating Labour.</p> <p>Kenya and East African Medical Journal 1927-1928 4(1) : p126-127.</p>	<p>Case report. Woman in labour for two days</p> <p>Kenya; Hospital</p> <p>Kikuyu woman. primip. N = 1</p> <p>FGM type: not stated, probably type II/III (slicing off of external parts and removal of vaginal mucous membrane)</p> <p>Age at FGM: among Kikuyu usually 4-8 years.</p>		<p>Obstetric complications</p> <ul style="list-style-type: none"> • Vaginal narrowing • Bladder adhesions and distortion of position. • Bladder drawn down by adhesions. • Fistula formation as result of altered vaginal anatomy and prolonged labour leading to: • Peritonitis • Septicaemia • Maternal death • Still birth. 	<p>Difficult to comment on this case as woman had been in labour for two days and that would be likely to cause a fistula</p> <p><i>Author suggests</i> FGM leads to stenosis.</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Vaginal narrowing due to FGM • Bladder adhesions following from vaginal narrowing <p>Obstetric</p> <ul style="list-style-type: none"> • Need for cutting during delivery • Fistula formation during prolonged labour due to gynaecological problems (see above) due to FGM • Infection: peritonitis. • Maternal death from septicaemia day 3 postnatally • Still birth

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<p>PIETERS, G 1972</p> <p>Gynaecologie au pays des femmes cousues</p> <p>Acta Chirurgica Belgica 1972 71 (3) : 173-193</p>	<p>Case Series N = 100 births of which N = 18 primips</p> <p>Fistula series N=14</p> <p>Observations and case studies</p> <p>EEC Hospital Mogadishu, Somalia</p> <p>Probably all FGM Type III (not specified) but mostly refers to infibulation</p>		<p>From case studies</p> <p>Psychosexual infertility 1 case study At marriage (12-15 years for girls usually), husbands expect non-consummation can occur. Husbands usually polygamous. Men can easily divorce provide repay bride price</p> <p>Gynaecological dysmenorrhoea (1 case study) “Dysmenorrhoea numerous cases seen in young girls” keloid scars haematocolpus (2 cases seen - “sewn too far”) Haematic subpubis cyst (7 years old, suppurating)</p> <p>Immediate problems (2 cases) bladder sequelae</p> <p>Urinary Inverse fibulation hole at top so “pee like a man”</p> <p>Obstetrics Fistulae from “clumsy use of little knife at birth”</p> <p>FGM now done in hospitals</p> <p>Clitoridectomy/infibulation done in hospitals every Sunday on little girls but also boys. Not during Ramadan. Local anaesthesia “completely insufficient despite four injections”. Blood flow not particularly severe, use light tamponing. Payment of \$11. Stitches out on 10th day and given injection of penicillin. Usually no immediate complications although haemorrhage and inflammation does occur.</p>	<p>Villeneuve’s 1937 study still valid in 1966, “confirmed by Mogadishu Hospital Somali nurses”.</p>

			<p>Obstetric sequelae - FGM Type III</p> <ul style="list-style-type: none"> • Frequent episiotomy (insisted on by local TBAS), often not needed for middle weight babies of Multiparas • Doubled (“completed”) if necessary by vertical incision for whole infibulation scar • 85/100 births episiotomies (all non episiotomies were Indian/Pakistani (N=18/100 births, primips) 11/100 bilateral • Refibulated postpartum (“a husband becomes frustrated”) <p>Psychological quotes Villeneuve 1937 cf</p> <p>Not extracted: Review of where FGM known/not known</p>	
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<p>PRESTON, P.G. 1942</p> <p>Six years' maternity work amongst the Wakikuyu at the Native Hospital, Fort Hall.</p> <p>East African Medical Journal 1942 19: 223-231 and 247-257.</p>	<p>Case reports and observational series for 29 months in periods of 3 - 15 months between September 1936 - December 1941 at Native Hospital, Fort Hall, Kenya</p> <p>N = 700 births and cases N = 1099 pregnancies N = 190 stillbirths</p> <p>Kikuyu women.</p> <p>Age at FGM: not stated - usually childhood.</p> <p>Type of FGM</p> <ul style="list-style-type: none"> Mainly FGM Type I (clitoridectomy) Sometimes FGM Type II/III ("if too much tissue is removed at the operation: sometimes the labia minora and parts of the labia majora are removed") 	<ul style="list-style-type: none"> Antenatal work. Delivery care Causes of maternal deaths and types of labour By types of labour 1936-1941 Still births N = 190 (causes of death) By types of labour Deaths of infants within 7 days of birth N = 48 Accidents during pregnancy Postpartum haemorrhage Rupture of the uterus Ectopic gestation Accidents at parturition Injuries to the perineum Vesico-vaginal fistula Rectovaginal fistula Retroverted uterus Neonatal birth injuries Asphyxia Infection Abortions 1936 - 1941 N = 123 Hospital admissions 1936 - 1941 for labour, abortion, other diseases, also labour 1932 - 1941 Pelvic measurements antenatally Length of labour N = 700 <p>Fetal</p> <ul style="list-style-type: none"> Presentation Congenital abnormalities Birth injuries Outcome of 2439 pregnancies (abortion, stillbirth, deaths at age 0-3 months, 3-6 months, 6-12 months, a time after 12 months) Causes of infant mortality 	<p>Obstetric complications of FGM</p> <p>Delayed or obstructed labour</p> <ul style="list-style-type: none"> FGM ("causes a certain amount of delayed or obstructed labour but is generally overcome by an episiotomy" provided no other factors to account for delay. "Perineum bulging like football" small vaginal orifice delivery aided by bilateral episiotomies. Contraction scar/keloid scar due to FGM III/II of vulva "tends to cause trouble"/delay in delivery Cases of obstructed labour due to scarring delivered by following means:- <p>Episiotomy</p> <ul style="list-style-type: none"> "Extensive episiotomy under general anaesthesia" - 16 cases ("do not include small episiotomies to avoid rupture of perineum") Episiotomy and forceps delivery - 9 cases Episiotomy and version - 2 cases <p>Caesarean section</p> <ul style="list-style-type: none"> "One case of true extensive scarring due to FGM, the patient having been in labour for some days prior to admission" Caesarean section performed to avoid "severe damage to genital canal and stillbirth". <p>Vesico-vaginal fistula (VVF)</p> <p>No cases seen where FGM scar cause of VVF.</p> <p>Psychosexual</p> <p>One case, FGM II (clitoris and labia minora completely removed), coitus painful or impossible due to extensive scar tissue</p> <p>FGM revision by circumciser which worsened problems</p> <p>Defibulation performed in hospital</p>	<p><i>Suggests sequelae of FGM</i></p> <p>Obstetric</p> <ul style="list-style-type: none"> tears of perineum (vulval scarring because of FGM) considered normal; often occur to sphincter ani delayed labour easily remedied by episiotomy Argues FGM is not a cause of obstructed labour but describes 28 cases where FGM did cause obstructed labour episiotomy (sometimes extensive bilateral needed) <p>Gynaecological</p> <ul style="list-style-type: none"> Severe vulval scarring <p>Psychosexual</p> <ul style="list-style-type: none"> dyspareunia penetration failure and request for medical help <p>Methodology</p> <p>Date of LMP calculated in lunar months (many did not know at all)</p>

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<p>PRESTON P.G. 1937 - 38</p> <p>A Case of Birth per Rectum.</p> <p>East African Medical Journal Vol. 14: 290-294</p>	<p>Case Report</p> <p>Kikuyu woman, aged 18 years unmarried Kenya.</p> <p>N = 1</p> <p>FGM Type III.</p> <p>Age at FGM: 3 years.</p>	<ul style="list-style-type: none"> • Continenence • Urinary and faecal • Perineal tears • Sepsis • Maternal death • Fetal death • Haemorrhage 	<ul style="list-style-type: none"> • Primigravida • Severe keloid scarring of perineum and vagina. • Prolonged labour 28 hours. • Delivery through rectum through 3rd degree perineal tear. • Still birth • Post partum haemorrhage (not quantified). • Maternal death 3 weeks post partum. <p>Not extracted: Details of laparotomy and treatment.</p>	<p><i>Suggests sequelae of FGM.</i></p> <p>Obstetric</p> <p>- Maternal:</p> <ul style="list-style-type: none"> • Prolonged labour (due to obstruction by keloid scarring). • Perineal tears (3rd degree) extending to anus. • Post partum haemorrhage which caused the patient to faint • Sepsis. • Maternal death 3 weeks post partum <p>Fetal</p> <ul style="list-style-type: none"> • Still birth

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<p>PHILP, H.R.A. 1925/26</p> <p>Artificial atresia in Kikuyu women.</p> <p>Kenyan Medical Journal 1925-1926 66-67</p>	<p>Observational series.</p> <p>N = 44 operated on at Mission Hospital, Tumu Tumu, Kenya.</p> <p>Kikuyu women.</p> <p>FGM Type III (“removal of all external genitalia and removal of lining membrane of vagina causes single opening for urine and menstruation which will not admit a thick probe”).</p> <p>Age at FGM: (among Kikuyu) 3 - 8 years.</p>	<p>Surgical operations at delivery. One case of acute urinary retention.</p>	<p>Acute complication</p> <ul style="list-style-type: none"> • Urinary retention <p>Long term complications</p> <p>Urinary problems acute urinary retention observed</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Prolonged labour due to hard scar • tissue • Episiotomy (two posterlateral) creating further scar tissue and further pain <p>Neonatal death/stillbirth contributing a large percentage of infant mortality</p> <ul style="list-style-type: none"> • Gynaecological <i>Implies</i> difficulty in conceiving • Menstrual problems • Vaginal calculi <p>Not extracted: Surgery details</p>	<p>All reported/anecdotal observations.</p> <p>No frequencies given.</p> <p><i>Suggests</i> sequelae of FGM</p> <p>Urinary problems</p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Menstrual problems • Fertility problems <p>Obstetric problems</p> <p>Neonatal Death/stillbirth</p>

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<p>PRESTON, P.G. 1954</p> <p>Some observations on Kikuyu Marriage and Childbirth.</p> <p>East African Medical Journal October 1954 Vol. 31 : p465-470.</p>	<p>Notes on clinical experience in Kenya, Fort Hall (1941 - 1954).</p> <p>Case report</p> <p>Age at FGM: 9-12 years.</p> <p>FGM Type II/III (excising clitoris and often the labia minora and sometimes portions of the labia majora).</p>		<p>Case Report Nine year old girl.</p> <p>Razor slipped during circumcision making a large hole through the anterior vaginal and posterior bladder wall leading to large vesico-vaginal fistula admitting two fingers.</p> <p>“Numbed” by immersion in a cold mountain stream for about 1 hour.</p> <p>Obstetric Incisions in vulva to assist labour. “Perineal tears uncommon particularly in view of the circumcision”.</p> <p>Appreciable anterior tears especially in primips at the scar in the region of the clitoris.</p> <p>Infertility Admitted very rarely, especially low rates of reporting of male infertility.</p> <p>Not extracted: Beliefs about breech presentation, vernix caseosa, coitus in pregnancy, figts, illegitimate pregnancy, adultery payments, practices with umbilical cord, placenta, infanticide with multiple births, social practices with infertility, land inheritance.</p>	<p><i>Suggests sequelae of FGM II/III.</i></p> <p>Immediate Vesico-vaginal fistula.</p> <p>Obstetric Anterior tears in region of clitoris scar common Perineal tears uncommon Post partum haemorrhage</p> <p>Background information Obstetric and Infertility</p> <p>Important information: Pushing is encouraged even if cervix not fully dilated, may increase cervical lacerations.</p>

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<p>PRITCHARD, B.J. 1969</p> <p>Soft tissue dystocia in circumcised women.</p> <p>Nursing Mirror 1969 : 25th April 31</p>	<p>Case reports.</p> <p>Sudanese women seen at St. Mary Abbots Hospital, London.</p> <p>N = 3</p> <p>FGM Type III</p> <p>Age at FGM: 4-7 years usually in Sudan, but review section suggests 10-12 years (so reference may refer to these patients).</p>		<p>Obstetric Need for anterior episiotomy in addition to posterolateral episiotomy 3/3.</p> <p>Parity not stated.</p>	<p>Small series.</p> <p><i>Suggests sequelae of FGM.</i></p> <p>Obstetric</p> <ul style="list-style-type: none"> • No effect on 1st stage • Soft tissue dystocia due to fibrous scarring Difficult to assess progress of labour • Excessive laceration and bruising, especially in primips <p>Episiotomies</p> <ul style="list-style-type: none"> • anterior and posterolateral. <p>Pain</p> <ul style="list-style-type: none"> • Exaggerated above normal level expected with perineal repair, so analgesics were administered.

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<p>ROBERTS, M. 1944</p> <p>An analysis of 90 cases of Transplantation of the ureter for Obstetrical Vesico-Vaginal Fistulas</p> <p>Journal of Obstetrics and Gynaecology of the British Empire 1944 51 : 519-525</p>	<p>Case series</p> <p>All patients with vesico-vaginal fistula treated for ureter transplant from 1936-1942 at Native Civil Hospital, Nairobi, Kenya</p> <p>N = 90 (excluding those who did not return for completing operation).</p> <p>Mostly from tribes with a prevalence of FGM of 90%</p> <p>FGM Type III “A very radical degree of so-called “female circumcision”</p> <p>“excision of the clitoris, a greater or lesser extent of the anterior commissure and the labia minora.</p> <p>Atresia of the vulva to some extent occurs in all these patients”.</p> <p>Age at FGM: puberty.</p>	<ul style="list-style-type: none"> • Reasons for difficult birth/long labour • Mortality from operation. • Sequelae of long labour (much due to FGM). 	<p><i>Suggests</i> FGM is a major reason for delay in labour.</p> <p>Not extracted: Details/results of ureter transplantation, mortality of operation.</p>	<p>Does not compare rates of VVF of those with FGM and those without.</p> <p><i>Suggests</i> sequelae of FGM Type III (as 90% prevalence in area studied).</p> <p>Immediate</p> <ul style="list-style-type: none"> • Sepsis • Scarring <p>Gynaecological</p> <ul style="list-style-type: none"> • Vaginal atresia • Incontinence post-partum. <p>Obstetric</p> <ul style="list-style-type: none"> • Delay in 2nd stage of labour • Episiotomy • Vesico-vaginal fistula formation <p>Neonatal</p> <ul style="list-style-type: none"> • Still birth.

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<p>RWIZA, H.T. MSUYA, D.R. MALANGWA, M. RWIZA, S.M. 1980</p> <p>Complications of traditional Female circumcision as seen at Usangi Government Hospital: (Case presentation with knowledge survey from the population and attitude survey of T.T.C. and M.A.T.</p> <p>Unpublished cases presented at M.A.T. meeting, Sept. 1980.</p>	<p>Case reports and survey of attitudes: Pare tribe.</p> <p>Usangi Government Hospital, Tanzania</p> <p>N = 3 cases One labour complication Two post-circumcision complications</p> <p>FGM type: not stated - probably FGM Type II.</p> <p>N = 20 interviewed.</p> <p>Age at FGM: 8-9 years</p>	<ul style="list-style-type: none"> • Magnitude of practice of FGM. • Who performs FGM? • Reasons for FGM? • Complications of FGM? • Efforts to discourage the practice. 	<p>Immediate complications of FGM</p> <p>Bleeding: 2 female children admitted post-circumcision unwell and bleeding, both anaemic, one clinically shocked.</p> <p>Infection: 1 female child - severe vulval sepsis.</p> <p>Urinary: 1 female child: urethral tear.</p> <p>Obstetric complications of FGM: (One primigravida) although 3 similar cases mentioned.</p> <ul style="list-style-type: none"> • perineal tears despite episiotomy. tear through old post-circumcision scar • tear through urethra • severe post partum haemorrhage as result of perineal tears. <p>Not extracted: Results of attitude questionnaire.</p>	<p><i>Suggests</i> obstetric complications of FGM.</p> <ul style="list-style-type: none"> • Perineal tears through old circumcision scar. • Urethral tears. • Post-partum vulval haemorrhage. <p><i>Suggests</i> groups practising FGM in Tanzania are limited to: Pare, Chagga, Masai, Gogo, almost all in Mara Region, some in Singida region.</p> <p><i>Suggests</i> Uraggi practice is declining.</p>

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<p>RENAUD, R et al 1968</p> <p>Les consequences gynecologiques et obstetricales de l'excision rituelle</p> <p>Rev Assoc Med Langue Francais 1968</p> <p>4: 188-191</p>	<p>Review of a 1962 primary data study by de Salverte</p> <ul style="list-style-type: none"> • Estimated 1700 excisions with 12 deaths from haemorrhage/tetanus (low reporting of death) <p>Ethnic group:</p> <ul style="list-style-type: none"> • Nandi • Bonake “Do cult” area of Ivory Coast <p>Type of FGM:</p> <ul style="list-style-type: none"> • “excision and cauterisation with red hot poker” ie • Type II • Rare 3rd degree <p>From results of study:</p> <ul style="list-style-type: none"> • Prepuce I 30% • Clitoridectomy + labia minora II 64% • Complete infibulation III 6% 		<ul style="list-style-type: none"> • Immediate problems “are more important than later complications or obstetric sequelae” <p>Immediate problems</p> <ul style="list-style-type: none"> • deaths 12/?1700 • from haemorrhage and tetanus • Hemostatic plants used (yobao in Krou language) • damage to adjacent organs, urethra anus, ?vestibule (versie) does occur but less than might expect because excisor or husband of excisor sits on the girl <p>Infection increasingly rare because of availability of Penicillin</p> <ul style="list-style-type: none"> • Still some tetanus <p>Urine retention</p> <p>Later complications</p> <ul style="list-style-type: none"> • Prolonged anaemia following immediate haemorrhage <p>Obstetric complications</p> <ul style="list-style-type: none"> • “perineal simple tears twice as common in excised women (usually need a few stitches only) Occur in upper part vulva, especially circumcision scar. • 3rd degree tears rare because of use of large episiotomy “a complete/ complicated (? i.e. 3rd degree) tear is not more frequent in the excised female when episiotomy 	<p>Conclusions suggest</p> <ul style="list-style-type: none"> • Immediate problems more important than later complications • low reporting of deaths at time of FGM • prolonged anaemia following FGM operation <p>Obstetric sequelae of FGM</p> <ul style="list-style-type: none"> • perineal tears twice as frequent birth alone (in which perineal damage can be serious including anal incontinence <p>Birth at health centre</p> <ul style="list-style-type: none"> • episiotomies higher with FGM • instrumental deliveries twice as high after 30 mins pushing in 2nd stage • No increased rates caesarean section • No increased rates VVF • No increased uterine inertia • Suturing post-partum needed because otherwise some groups re-do excisions to reduce introitus

			<p>is practised preventatively but when they give birth alone, the perineal damage can be serious, producing anal incontinence and more sclerosed tissue each time they give birth”</p> <ul style="list-style-type: none"> • The number of episiotomies is considerably higher in FGM women than in other women”. “These episiotomies are systematically practised before (expulsion) delivery in people who have 2nd or 3rd degree excision to avoid tears of any type” • Require suturing post partum “ a lot of care to reconstitute the excision and obtain a supple scar” This is important because it is known that some groups do excisions after each delivery to reduce the introitus • length of 2nd stage of labour (periode d’expulsion) is the same whether or not FGM is present due to <ol style="list-style-type: none"> 1) preventive episiotomy - allows perineum to drop 2) “above all because after 30 mins we immediately use forceps/ventouse so incidence of instrumental delivery is twice as high in circumcised as non-circumcised. • Not noticed higher frequency of uterine inertia (as noted by Mustafa) • nor more frequent CS • nor encountered significant differences in VVF in people who came to the service. 	
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<p>SHANDALL 1967</p> <p>Circumcision and Infibulation of Females</p> <p>Sudan Medical Journal 1967 5 (4) : 178-212</p>	<p>Cross-sectional clinical study of FGM complications over 5 years.</p> <p>All women outpatients at O & G Outpatients Clinic in Khartoum General Teaching Hospital 1962 - 1966 from all areas of Sudan</p> <p>Design: Interview/Questionnaire Examination: meticulous recording Serial interviews and examination where possible.</p> <p>Study sizes: 4024 female adults 1245 Obstetric 2779 Gynaecological FGM+ = 3820 FGM- = 204</p> <p>Age at FGM Usually childhood in Sudan</p> <p>Study 1 A. FGM Type III = 3013 B. FGM Type II = 807 C. No FGM N = 204 (Adult patients seen by the writer at rate of 20 per week)</p> <p>Study 2 D. FGM Type III = 236 E. FGM Type I = 227 F. No FGM N = 37</p>	<p>Study 1 All adult women interviewed a) initially for history</p> <p>Immediate complications mainly: <ul style="list-style-type: none"> • Shock • Haemorrhage • Infection • Urine retention • also psychological trauma, injury to adjacent parts </p> <p>Treatment for complications <ul style="list-style-type: none"> • Keloid scar • Inclusion cysts (implantation dermoid cysts) • Abscesses </p> <p>Problems at marriage or childbirth b) At second or subsequent interviews asked about sexual response. Examination (at same time as routine gynaecological and obstetric examination Vulval abnormalities related to FGM: Keloid Implantation dermoid cysts Tight circumcision Results of injuries that may have occurred at time of FGM Culture of Urine samples, High vaginal swabs</p>	<p>Immediate complications mainly shock, haemorrhage, infection and retention of urine</p> <p>Average age of menarche not extracted</p> <p>Long term complications Gynaecological <ul style="list-style-type: none"> • Dysmenorrhoea. More common and usually severe with FGM Type III. May last the whole cycle. Haematocopos may develop, but only 2/3249 with colpocleisis with FGM Type III </p> <p>Chronic pelvic infection in adults Type III FGM 393/3013 = (13%) Type I FGM 31/807 = (3.8%) Type 0 FGM 12/204 = (5.8%)</p> <p>Adults only <ul style="list-style-type: none"> • Keloid scarring (frequency see below) • Fairly common especially among women of mixed Arab and Negro origin 80/119 with keloids had negro ancestor • Common where there was history of FGM wound infection </p> <p>All 32 adults with FGM scarring behind symphysis pubis give history of infection FGM Type III = 29/3013 (0.96%) FGM Type I = 3/807 (0.37%)</p> <p>Teenagers (Study 2) FGM Type III = 8/236 (3.4%) FGM Type I = 0.227</p> <ul style="list-style-type: none"> • Implantation dermoid cysts in the scar. (May also present as abscesses simulating Bartholin's gland abscess but situated in the scar) 	<p>Seven separate studies altogether, husbands, teenagers, prostitutes educated young mothers and case series of puerperal sepsis and VVF</p> <p>All types of FGM, 0, I, III seen No matching of cases/controls</p> <p><i>Suggests sequelae of FGM</i></p> <p>Gynaecological <ul style="list-style-type: none"> • Dysmenorrhoeas especially with FGM Type III • Haemocolpos (though rare) • Keloid scarring more common with FGM Type III than FGM Type I • Implantation dermoid cysts more common with FGM Type III than FGM Type I • Recurrent urinary infection with FGM Type III • Vaginal calculi with FGM Type III • Positive cultures on high vaginal swabs for E.coli, Minilia and Trichomonas most commonly with FGM Type III • Chronic pelvic infection </p> <p>Urinary problems <ul style="list-style-type: none"> • Bacteruria 3-4 times more common in Type III FGM than I or 0 • Urinary tract infection • 4 times more common in Type III as Type I or 0 </p> <p>Suggestive of recurrent U.T.I. as a significant outcome measure 4 times more likely with Type III FGM than I or O.</p>

<p>[500 teenage girls (school age daughters of adult patients)]</p> <p>Study 3</p> <ul style="list-style-type: none"> • 200 prostitutes examined <p>Study 4</p> <ul style="list-style-type: none"> • 300 husbands interviewed who had more than one wife each <p>Study 5</p> <ul style="list-style-type: none"> • 100 consecutive cases of puerperal sepsis admitted to isolation ward <p>Study 6</p> <ul style="list-style-type: none"> • 20 cases of VVF studied <p>Study 7</p> <ul style="list-style-type: none"> • Young mothers who had Type III but no complications with good education at least to secondary school on views of daughters and FGM. N = 100 	<p>Study 2</p> <p>Teenage girls (daughters of adult women patients) all young, unmarried</p> <p>Interviewed for Immediate complications</p> <p>Examined by inspection only for FGM type</p> <p>Vulval complications already apparent</p> <p>Study 3 and Study 4: see table</p>	<p>Adults</p> <p>FGM Type III 51/3013 (1.69%)</p> <p>FGM Type I 2//807 (0.25%)</p> <p>FGM Type 0 0/204 (0%)</p> <p>Teenagers</p> <p>FGM Type III 5/236 (2.12%)</p> <p>FGM Type I 0.227 (0%)</p> <p>FGM Type 0 (0%)</p> <ul style="list-style-type: none"> • Bartholin's cysts and abscesses (often infected cysts) <p>Adults</p> <p>FGM III Cyst 4/3013 (0.13%)</p> <p>Abscesses 3/3013 (0.1%)</p> <p>FGM I Cyst 1/807 (0.12%)</p> <p>Abscesses 1/807 (0.12%)</p> <p>FGM 0 Cyst 1/204 (0.49%)</p> <p>Abscesses 1/204 1/204 (0.49%)</p> <p>Teenagers</p> <p>FGM III Cyst 0/236 (0%)</p> <p>Abscesses 0/236 (0%)</p> <p>FGM I Cyst</p> <p>Abscesses</p> <p>FGM 0 Cyst</p> <p>Abscesses</p> <ul style="list-style-type: none"> • Urinary infection and bacteruria in adults <p>Bacteruria:</p> <p>Type III FGM = 843/3013 (28%)</p> <p>Type I FGM = 64/807 (8%)</p> <p>Type 0 FGM = 16/204 (8%)</p> <p>Urinary infection</p> <p>Type III FGM = 482/3013 = (16%)</p> <p>Type I FGM = 30/807 = (4%)</p> <p>Type 0 FGM = 8/204 = (4%)</p> <p>Recurrent urinary infection:</p> <p>Type III FGM = 120/3013 = (4%)</p> <p>Type I FGM = 9/807 = (1%)</p> <p>Type 0 FGM = 2/204 = (1%)</p>	<p>Probable changing FGM practice</p> <p>Of girls with FGM I N 27 103/227 (45%) of their mothers had Type III. Of the daughters with FGM 51% of their mothers had Type I.</p> <p>Mothers' group is not a community based sample but those referred for problems, so a comparison with the daughters needs to be treated with caution.</p> <p>Cases with puerperal sepsis have FGM</p> <ul style="list-style-type: none"> • Vesico Vaginal Fistula insignificant risk factor <p>Fetal distress</p> <p>(no direct comparisons)</p> <ul style="list-style-type: none"> • haemorrhage from circumcision (not quantified) <p>Psychosexual</p> <ul style="list-style-type: none"> • 3% of FGM III group require deinfibulation for tight circumcision • Difficulty in penetration 1% of FGM group had inability to penetrate leading to infertility • Anorgasmia 12 x more likely never to have had orgasm with FGM I than FGM O
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			<ul style="list-style-type: none"> • High Vaginal Swab Culture (All groups had similar rates of positive culture for Diphtheroid bacilli (40%), staph-albus (20%) and haemolytic strep. (10%) <p>Adults</p> <p>E. Coli</p> <p>FGM Type III 301/3013 (10%) FGM Type I 40/807 (5%) FGM Type 0 10/204 (5%)</p> <p>Monilia (candida)</p> <p>FGM Type III 452/3013 (15%) FGM Type I 81/807 (10%) FGM Type 0 20/204 (10%)</p> <p>Trichomonas</p> <p>FGM Type III 307/3013 (10%) FGM Type I 40/807 (5%) FGM Type 0 40/807 (5%)</p> <ul style="list-style-type: none"> • Vaginal Calculi “rare” : 2/3013 cases (described in detail) both infibulated (FGM Type III) 0/807 in Type 1 FGM • Chronic pelvic infection N = 436 non-tuberculosis chronic pelvic infection over 5 years <p>Adults</p> <p>FGM III 393/3013 (13%) FGM I 31/807 (4%) FGM 0 12/204 (6%)</p> <p>Psychosexual</p> <ul style="list-style-type: none"> • Tight infibulation (defined by author as “when it does not allow intercourse”) • Pregnancy with a pin-hole introitus (“hujta”) 5/3013 Tight infibulation may result from initial FGM Type III or from “Adla” which is re-infibulation following childbirth 	
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			<ul style="list-style-type: none"> • Tight infibulation surgically treated = 105/3013 (often following re-tightening after childbirth with ever thicker scar tissue in multiparas). “This is the sphere where the main morbid sequelae resided” None needed with FGM Type I • Penetration failure 110/3013 • Sexual Response “Removal of clitoris interferes with sexual response” ➢ Never had orgasm: FGM Type III 2520/3013 = (83.6%) FGM Type I 98/807 = (12.1%) FGM Type 0 14/204 = (6.86%) ➢ Had orgasm in 50 - 75% of occasions Type III 180/3013 = (5.97%) Type I 300/3013 = (37.17%) Type 0 61/204 = (29.9%) ➢ Had orgasm on less than 50% of occasions Type III 162/3013 = (5.3%) Type I 139/807 = (17.2%) Type 0 29/204 = (14.2%) ➢ Had orgasm on more than 75% of occasions Type III 151/3013 = (5.01%) Type I 270/807 = (33.46%) Type 0 100/208 = (49.2%) <p>FGM Type III 80/3013 women claimed not to know that women get satisfaction from intercourse and had no idea about orgasm.</p> <p>Husband’s views: 300 men all with one wife with FGM Type III and at least one wife with FGM Type 0 or I. 266/300 preferred sex with wives with FGM/0/I rather than FGM III “because they seem to share with them the desire, the act and the pleasure, unlike those with FGM III who always seem to be putting on an act and never seem to enjoy intercourse”. 90/300 felt wife with FGM III suffering a lot of pain. Wife never had orgasm. 60 men married second wives only because they could not keep up with the ordeal of perforating the progressively toughening FGM scar every time they had babies. Only 34 mentioned sex better with FGM Type III</p>	
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			<p>Obstetric complications</p> <p>Injuries at anterior episiotomy</p> <ul style="list-style-type: none"> • Splitting of urethra leading to urethrovaginal fistula = 1/1245 <p>Proper vaginal examination difficult in labour. 5/3013 (FGM Type III) had to have scar split for catheterisation and vaginal examination in labour. (All had become pregnant via pinhole introitus).</p> <ul style="list-style-type: none"> • Vesico-vaginal fistula <p>Stated by author: “FGM may add to the delay of the delivery of the head but the usual course of vesico-vaginal fistula is cephalo-pelvic disproportion”</p> <p>Of 20 cases VVF FGM 0 = 9 FGM I = 4 FGM III = 7</p> <p>Delay 2nd stage with FGM III Perineal tears, or if early incision of scar, excessive blood loss, pain, inertia.</p> <p>Puerperal sepsis N = 100 admitted, 40 (40%) due to infected FGM scar FGM III 12% postpartum wound infection, sometimes very severe.</p> <p>FGM I 5% infected episiotomy history including psychological trauma in spite of being brought up to look forward to day of FGM (Tahour) and imagine a day of pleasure and celebration in her honour</p> <p>Not extracted:</p> <ul style="list-style-type: none"> • Immediate complications including case reports of injuries to adjacent parts. • Retightening of circumcision after childbirth (“Adla”) producing thick tough scarring • Views of mothers on their daughters and FGM 	
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			<p>Infertility Adults with Type III FGM 105/3013 = 3% deinfibulated due to tight circumcision. 32/105 had complained of primary infertility of 2-10 years 32/105 = 1% 23/32 conceived within six months of deinfibulation</p> <p>Results of examination of 200 female prostitutes 170/200 Type III = 85% 22/200 Type I = 11% 8/200 Type O = 4%</p>	
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<p>SHAW E 1985</p> <p>Female circumcision: perception of clients and caregivers</p> <p>Journal of American College Health 1985 33 (5) : 193-197</p>	<p>1. Descriptive study to identify, by informal interview. Specific needs and concerns of a group of 12 circumcised women who have used the western medical system while living in the United States.</p> <p>Women from Sudan, Egypt, Somalia</p> <p>FGM type: not stated</p> <p>Age at FGM: childhood</p> <p>2. Questionnaire based follow-up study sent to care providers of 95 student health centres with foreign students expected to number more than 500, to identify problems and concerns that student health providers encountered while caring for circumcised women</p>		<p>1. N = 12</p> <p>Recommendations/suggestions agreed upon by over 90% of respondents</p> <p>Antenatal fears Worried about painful pelvic examinations 12/12 100%</p> <p>Obstetric Fears expressed regarding</p> <ul style="list-style-type: none"> • unnecessary damage and additional cost of services needed • tearing of infibulation scars due to anterior episiotomies that were not performed quickly enough • being resutured incorrectly post partum • post partum infection <p>suggested that these complications arise because of providers ignorance and mismanagement of deliveries in presence of FGM</p> <p>Not extracted: Health care provider study Concerns of providers caring for circumcised women</p>	<p><i>Suggests women with FG resident in US have concerns re:</i></p> <p>Gynaecological Pelvic examination anticipated to be painful</p> <p>Obstetric Fear of delivery Experience/fear of perineal tears Fear of ignorance of health care provider re: FGM Experience/fear of improper suturing post partum Experience of post partum infection Fear of additional cost to pay for extra services needed</p>

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<p>SHEIK, H.A. 1996 Project Co-ordinator, WHO/UNFPA Mogadishu, SOMALIA.</p> <p>1. Safe Motherhood in Somalia. 2. FGM in Somalia</p> <p>Memo to Maternal Health/Safe Motherhood, WHO Geneva Unpublished Somalia</p>	<p>Review of Maternal Mortality and Morbidity in Somalia</p> <p>Merka Hospital maternal and infant morbidity/mortality 12 months</p> <p>January - December 1995.</p> <p>Type of FGM: not recorded (usually Type III in Somalia).</p>	<ul style="list-style-type: none"> • Neonatal deaths • Maternal deaths • Births by sex gender • Caesarean section and deaths • Frequency of FGM • Beliefs for performing FGM • Consequences of FGM 	<p>Reviews Somali FGM data from Abdalla, 1982.</p> <p>Not clear if section on FGM is a review or relates to personal observation.</p> <p>Not extracted: Details of death rates</p>	<p>Describes complications of possibly all types of FGM.</p> <p>Before operation on children Worry, anxiety, sleeplessness, nightmares and panic.</p> <p>At the time of the marriage</p> <ul style="list-style-type: none"> • Perineal, urethral, rectal laceration by force by husband i.e. defloration trauma/haemorrhage <p>Obstetric</p> <ul style="list-style-type: none"> • Prolonged/ obstructed labour <p>No cases or data to substantiate reports: Maternal/perinatal morbidity statistics present but no inference can be made regarding risk attributable to FGM</p> <p>Not extracted: Immediate complications or those within the first 10 days maternal mortality, Somalia.</p>

Table 12 Summary of studies included in the review arranged alphabetically by author

Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>SILBERSTEIN, A.J. 1977</p> <p>Circumcision Feminine en Cote d'Ivoire.</p> <p>Ann Soc Belge Med Trop 1977 57 : 129 - 135</p>	<p>Review Case Reports</p> <p>N = 4 immediate complications N = 4 obstetric</p> <p>Cote d'Ivoire Odienne Hospital</p> <p>Ethnic group North west Malinke (Muslim originating in Mali Guere (non Muslim)</p> <p>FGM Type II.</p> <p>Age at FGM: 6, 13, 16 years</p>		<p>Immediate complications Haemorrhage 4/4.</p> <p>Long term</p> <ul style="list-style-type: none"> • Secondary scarring following excision leading to vulval adhesions <p>Obstetric Need for anterior episiotomy: 4 cases seen Urinary disturbance</p> <p>Not extracted: List of review complications.</p>	<p>Francophone Africa</p> <p>Long term sequelae of FGM II</p> <p>Gynaecological Secondary scarring and adhesions.</p> <p>Obstetric Anterior episiotomy</p>

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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications																																																																								
<p>TAHZIB, F. 1983</p> <p>Epidemiological determinants of vesico-vaginal fistulas.</p> <p>British Journal of Obstetrics and Gynaecology 1983 90 : 387 - 391</p>	<p>Case series:</p> <p>Ahmadu Bello University, Kaduna State, Northern Nigeria</p> <p>Patients operated on for vesico-vaginal fistula from January 1969 to December 1980.</p> <p>N = 1443</p> <p>Questionnaire in 54 parts.</p> <p>FGM Type IV (Gishiri cuts).</p> <p>Ethnic groups using Gishiri cutting: Hausa Fulani Kanuri</p> <p>Age at FGM: IV; depends on indication for gishiri cut.</p>	<ul style="list-style-type: none"> • Aetiological factors leading to fistulas. • Duration of labour and mode of delivery in patients with fistula caused by labour. • Age and parity when the fistula occurred. • Relational between incidence of age on severity of VVF lesions for those with labour as the aetiological factor. • Age of gishiri cutting in Hausa patients, and gishiri cuts as direct cause of VVF. • Social determinants of gishiri cuts (FGM Type IV). 	<p>Aetiological factors leading to fistulas.</p> <table border="0"> <tr> <td>Prolonged labour</td> <td>1209/1443</td> <td>(83.8 %)</td> </tr> <tr> <td>Surgical trauma</td> <td>14/1443</td> <td>(1.0 %)</td> </tr> <tr> <td>Infection</td> <td>10/1443</td> <td>(0.7 %)</td> </tr> <tr> <td>Gishiri cut</td> <td>188/1443</td> <td>(13.0 %)</td> </tr> <tr> <td>Others (including coitus, pelvic fracture, insertion of caustic materials into vagina)</td> <td>22/1443</td> <td>(1.5 %)</td> </tr> </table> <p>Age and Parity</p> <table border="0"> <tr> <td>Nullips</td> <td>63/1443</td> <td>(4.4%)</td> </tr> <tr> <td>Nullips aged less than 13 years</td> <td>31/63</td> <td></td> </tr> <tr> <td>Primips</td> <td>751/1443</td> <td>(52%)</td> </tr> </table> <p>Other details not extracted</p> <p>Traditional practice of Gishiri cutting and frequency of fistulas 13% of all fistulas due to Gishiri cutting, increasing significantly in frequency and importance as a direct cause of fistulas with increasing age.</p> <p>Age and experience of having had gishiri cutting in Hausa patients. (Hausa N = 1068).</p> <table border="0"> <thead> <tr> <th>Age</th> <th>Yes gishiri cut</th> <th>No gishiri cut</th> <th>Not certain</th> <th colspan="2">% with Gishiri cuts but as direct aetiological factor</th> </tr> </thead> <tbody> <tr> <td>13 yrs.</td> <td>18/61 (30%)</td> <td>19/61 (31.1%)</td> <td>24/61 (39%)</td> <td>16%</td> <td></td> </tr> <tr> <td>14-19</td> <td>124/513 (24%)</td> <td>131/513 (26%)</td> <td>258/513 (50%)</td> <td>7%</td> <td></td> </tr> <tr> <td>20-30</td> <td>111/301 (37%)</td> <td>79/301 (26%)</td> <td>111/301 (37%)</td> <td>15%</td> <td></td> </tr> <tr> <td>31-39</td> <td>35/66 (52%)</td> <td>11/66 (17%)</td> <td>20/66 (31%)</td> <td>35%</td> <td></td> </tr> <tr> <td>>40 yrs.</td> <td>26/29 (90%)</td> <td>2/29 (6.9%)</td> <td>1/29 (3.4%)</td> <td>90%</td> <td></td> </tr> <tr> <td>not known</td> <td>33/98 (33%)</td> <td>21/98 (21%)</td> <td>44 /98 (45%)</td> <td>21%</td> <td></td> </tr> <tr> <td>Total</td> <td>347/1068 (33%)</td> <td>263/1068 (25%)</td> <td>458/1068 (43%)</td> <td>161/1068 (15%)</td> <td></td> </tr> </tbody> </table> <p>Overall 347/1068 (33%) Hausa patients had had a Gishiri cut.</p> <p>VVF due to gishiri cuts are characteristic: mainly longitudinal clean cuts involving the urethra and/or midvaginal region, most easily repaired and wholly preventable.</p>	Prolonged labour	1209/1443	(83.8 %)	Surgical trauma	14/1443	(1.0 %)	Infection	10/1443	(0.7 %)	Gishiri cut	188/1443	(13.0 %)	Others (including coitus, pelvic fracture, insertion of caustic materials into vagina)	22/1443	(1.5 %)	Nullips	63/1443	(4.4%)	Nullips aged less than 13 years	31/63		Primips	751/1443	(52%)	Age	Yes gishiri cut	No gishiri cut	Not certain	% with Gishiri cuts but as direct aetiological factor		13 yrs.	18/61 (30%)	19/61 (31.1%)	24/61 (39%)	16%		14-19	124/513 (24%)	131/513 (26%)	258/513 (50%)	7%		20-30	111/301 (37%)	79/301 (26%)	111/301 (37%)	15%		31-39	35/66 (52%)	11/66 (17%)	20/66 (31%)	35%		>40 yrs.	26/29 (90%)	2/29 (6.9%)	1/29 (3.4%)	90%		not known	33/98 (33%)	21/98 (21%)	44 /98 (45%)	21%		Total	347/1068 (33%)	263/1068 (25%)	458/1068 (43%)	161/1068 (15%)		<p>Useful information on FGM IV, Gishiri cutting in Northern Nigeria.</p> <p>Social determinants/ Indications for Gishiri cuts</p> <ul style="list-style-type: none"> • Obstructed labour. • Infertility • Dyspareunia • Amenorrhoea • Goitre • Backache • Dysuria <p>Gishiri cuts in under 13 years often for dyspareunia, occasion-ally by husband when wife could not be penetrated</p> <p>Suggests sequelae of Gishiri cuts</p> <p>Gynaecological and Obstetric (N = 188)</p> <ul style="list-style-type: none"> • 13% of Vesico-vaginal fistulae N = 1443) due to FGM IV <p>N.B. Occurs even in Nullips. as a result of direct trauma.</p>
Prolonged labour	1209/1443	(83.8 %)																																																																										
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			Not extracted: <ul style="list-style-type: none">• Education.• Environment and the quality and utilization of medical services.• Other outcome measures listed.	Caustic materials in vagina mentioned as cause of fistula used for infertility, dyspareunia and other complaints.
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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>TAHZIB, F. 1985</p> <p>Vesico-vaginal Fistula in Nigerian Children.</p> <p>Lancet 2 (II) : 1291-1293, 1985</p>	<p>Report of vesico-vaginal fistula (VVF) in children less than 13 years</p> <p>From large VVF Case series.</p> <p>All patients operated on for genitourinary fistula in Ahmadu Bello University, Northern Nigeria, from 1969 - 1980</p> <p>N = 1443, with 54 page proforma</p> <p>Current report on under 13 years. Of these, the number under the age of thirteen when they become incontinent N = 80.</p> <p>FGM Type IV (Gishiri cuts, “anterior and occasionally the posterior aspect of vagina is incised by a sharp instrument”)</p> <p>Ethnic groups Hausa, Fulani, Kanuri tribes</p>	<ul style="list-style-type: none"> • Aetiology of VVF • Duration • Description • Type of Operation. 	<p>Aetiology of VVF</p> <ul style="list-style-type: none"> • Gishiri cuts (FGM Type IV) 12/80 (15%) • prolonged labour 48/80 (60%) • infection 8/80 (10%) • other causes 12/80 (15%) (including coitus 4/12) 	<p>Important information.</p> <p>Describes general indications for Gishiri cuts (FGM IV)</p> <ul style="list-style-type: none"> • prevention and treatment of obstructed labour. • amenorrhoea • dyspareunia • coital difficulties • infertility • high fever • goitre • generalised body aches and pains • ill health • vulval rash <p>Paediatric gishiri cuts mostly for</p> <ul style="list-style-type: none"> • dyspareunia • amenorrhoea • coital dysfunction • also for abdominal pain, vulval rashes, ill health, high fever • infertility; one case done by husband to under introitus. <p><i>Suggests sequelae of Gishiri cuts.</i></p> <ul style="list-style-type: none"> • Vesico-vaginal fistulae mainly mid-vaginal. • Total or partial destruction of the urethra. • Haemorrhage.

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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>WILLIAMS N. D. 1993</p> <p>Circumcision and health among rural women of Southern Somalia as a part of a family life survey.</p> <p>Health Care for Women International 1993 14: 215-226</p>	<p>UNESCO Survey in 1986 Using local staff (teachers) Open-ended needs assessment Questionnaire pretested twice</p> <p>Study area: Lower Juba, Southern Somalia Population 9,000.</p> <p>Study base: Kismayo. Family Life Teacher Training Center</p> <p>Interviewers: N = 33. Respondents: N = 859 (1% population sample) Somali women aged 11-50+ from 16 semipastoral and 16 agricultural villages.</p> <p>Age at FGM: mean 6.9 years.</p> <p>Type of FGM</p> <p>FGM Type III n = 842 (98%) FGM Type I/II n = 17 (2%) (uninfibulated)</p>	<ul style="list-style-type: none"> • Description of typical setting in which FGGM performed. • Attitudes to FGM. • Preferences regarding FGM for selves and daughters. • Concerns regarding complications of FGM. 	<p>Anecdote (1). 38 year old teacher had 3 repeat operations to achieve “proper circumcision” and personally attributed her problems with headaches, recurring pain and frigidity to these operations.</p> <p>Concerns of most women: Pain, before and after the procedure and ways to minimise keloid scars.</p> <p>Citing positive aspects FGM: 85% i.e. 730/859</p> <p>Citing negative aspects FGM: 65% i.e. 558/859</p> <p>Primary concerns</p> <ul style="list-style-type: none"> • Childbearing • Keloid scars • Pain at the operation for their offspring <p>Many cited long term problems of FGM</p> <ul style="list-style-type: none"> • Obstetric • Gynaecological • Genito-urinary 	<p><i>Suggests sequelae of FGM although data mainly anecdotal</i></p> <p>Gynaecological</p> <ul style="list-style-type: none"> • Keloid scarring • Pain • Genito-urinary <p>Obstetric</p> <ul style="list-style-type: none"> • “Problems with childbearing” <p>Psychosexual</p> <ul style="list-style-type: none"> • Headaches • Recurrent pain • Frigidity <p>Not extracted:</p> <ul style="list-style-type: none"> • Childhood FGM procedure • Person performing FGM and method used • Somalia’s current economic situation and recent history. • Procedure to achieve local collaboration.

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Study	Review categories, study population, country, study design, study size	Outcome measures, follow-up	Results	Commentary and implications
<p>WORSLEY, A. 1938</p> <p>Infibulation and Female Circumcision. A Study of a Little Known Custom.</p> <p>Journal of Obstetrics and Gynaecology of the British Empire 1938 Vol. 45 : 686-691</p>	<p>Notes from observations made during seven years of practice as gynaecologist in Omdurman, Sudan</p> <p>Age at FGM: 6 years</p> <p>FGM Type III</p> <p>Review of FGM in other countries.</p>		<p>Immediate complications. Haemorrhage Urethral injury Infection Cellulitis</p> <p>Long term complications. Keloid scarring in 50% of cases. Defibulation at/before marriage. Pregnancy in presence of pin-hole introitus. Refibulation following childbirth. Extensive perineal tears as result of unskilled attempts at defibulation at delivery</p> <p>Not extracted: Review of cultural attributes of FGM in Sudan.</p>	<p><i>Suggests</i> long term sequelae of FGM III.</p> <p>Gynaecological Keloid scarring</p> <p>Urinary problems Urethral meatus incorporated into wound</p> <p>Obstetric</p> <ul style="list-style-type: none"> • Pregnancy in presence of pin-hole introitus Unskilled attempts at defibulation leading to • Perineal tears (extensive)

4. FURTHER LISTINGS OF ARTICLES FOUND ON HEALTH SEQUELAE AND FGM

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**Criteria for further development of selection of FGM articles for abstracting
(possibly useful in the design of further FGM studies)**

This Appendix shows additional criteria used by Best Evidence for selection of papers, but which could not currently be applied to much of the literature found on health sequelae of FGM. These criteria may be useful for designing future FGM studies.

1. Basic criteria that were used for the present review: original or review articles
 - In any language
 - About humans
 - About topics that are important to the health complications of FGM
2. Studies of prevention or treatment for Best Evidence must meet these additional criteria:
 - Random allocation of participants to comparison groups
 - Follow-up (end-point assessment) of at least 80% of those entering the investigation
 - Outcome measure of known or probable clinical importance
 - Analysis consistent with study design
3. Studies of diagnosis for Best Evidence must meet these additional criteria:
 - Clearly identified comparison groups, at least one of which is free of the disorder or derangement of interest
 - Interpretation of diagnostic standard without knowledge of test result
 - Interpretation of test without knowledge of diagnostic standard result
 - Objective diagnostic (gold) standard (e.g. laboratory test not requiring interpretation OR current clinical standard for diagnosis, preferably with documentation of reproducible criteria for subjectively interpreted diagnostic standard (e.g. report of statistically significant measure of agreement among observers))
 - Analysis consistent with study design
4. Studies of prognosis for Best Evidence must meet these additional criteria:
 - Inception cohort of individuals, all initially free of the outcome of interest
 - Follow-up of at least 80% of patients until the occurrence of a major study end point or to the end of the study
 - Analysis consistent with study design

5. Studies of causation for Best Evidence must meet these additional criteria:
 - Clearly identified comparison group for those at risk for, or having, the outcome of interest (i.e. randomised controlled trial, quasi-randomised controlled trial, non-randomised controlled trial, cohort analytic study with case-by-case matching or statistical adjustment to create comparable groups, case control study).
 - Blinding of observers of outcome to exposure (criterion assumed to be met if outcome is objective, (e.g. all-cause mortality, objective test)
 - Blinding of observers of exposure to outcomes for case-control studies OR blinding of subjects to exposure for all other designs
 - Analysis consistent with study design

6. Studies of quality improvement and continuing education for Best Evidence must meet these additional criteria:
 - Random allocation of participants or units to comparison groups
 - Follow-up of at least 80% of participants
 - Outcome measure of known or probable clinical or educational importance
 - Analysis consistent with study design

7. Studies of the economics of health care programs or interventions for Best Evidence must meet these additional criteria:
 - The economic question addressed must be based on comparison of alternatives
 - Alternative diagnostic or therapeutic services or quality improvement activities must be compared on the basis of both the outcomes produced (effectiveness) and resources consumed (costs)
 - Evidence of effectiveness must be from a study (or studies) that meets the above-noted criteria for diagnosis, treatment, quality assurance, or a review article
 - Results should be presented in terms of the incremental or additional costs and outcomes of one intervention over another
 - Where there is uncertainty in the estimates or imprecision in the measurement, a sensitivity analysis should be done

8. Review articles for Best Evidence must meet these additional criteria:
 - An identifiable description of the methods indicating the sources and methods for searching for articles
 - Statement of the clinical topic and the inclusion and exclusion criteria for selecting articles for detailed review

Reference: ACP (American Journal of Physicians) Journal Club 1994; 120 (3): A-9-10. Best Evidence Purpose, Procedure and User Guide, 1997.