

Credidimus caritati
we have put our
faith in love

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Bulletin of OMR&RCA

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Vale Emeritus Professor James Brown

1919-2009

In early November last year, after the last edition of the *Bulletin* had gone to print but before you would have received it, we had, with heavy hearts, the task of sending out to our friends all around the world the following notice:

Today we have the sad duty to inform you of the death on 31st October 2009 of our good friend Emeritus Professor James Boyer Brown MSc NZ, MSc Melb, DSc Edin, PhD, FRANZCOG, aged 90, after a short illness.

Born 7 October 1919 in New Zealand and educated at Auckland University College (MSc), Jim subsequently travelled to Scotland where he studied at Edinburgh University (PhD, DSc). He worked in Scotland as a Biochemist (1940-44) before returning to New Zealand to work as a Clinical Biochemist for the Auckland Hospital Board 1944-49 and as Assistant Director, Clinical Endocrinology Research Unit, Medical Research Council, University of Edinburgh 1958-62.

Jim came to Melbourne in 1962 and worked as First Assistant Endocrinologist, University of Melbourne 1962-71. He was subsequently awarded a Personal Chair as Professor of Obstetrics and Gynaecology 1972-84 and continued as Senior Associate and Emeritus Professor from 1985 until his death.

In the 1960s he began work with Drs John and Evelyn Billings on the hormonal verification of the Billings Ovulation Method of natural fertility regulation. They maintained a close working relationship and friendship for the remainder of their lives.

Jim Brown invented the Ovarian Hormone Monitor, a DIY machine which revolutionized the performance of laboratory-standard assays of oestrogen and progesterone metabolites in urine enabling accurate identification of the timing of ovulation. This has assisted many women to achieve a desired pregnancy and has also been invaluable in tracking hormones to identify endocrine disorders without the need for regular blood tests.

Jim is survived by his wife Wendy and their 4 children.

We now want to share with you some of the messages and tributes that poured in from all around the world on news of Professor Brown's death.

Eulogy to James Boyer Brown

Adrian K Thomas MB BS, FRACOG, FRCOG

Funeral service at Heidelberg Uniting Church
Friday 6th November 2009

To do justice to the professional achievements of James Boyer Brown would take the best part of the rest of the day so I am not going to attempt to do this. Instead I am going to focus on what I consider were the major milestones in his life and those aspects of his work which have had the most lasting effects.

Jim graduated from Auckland University in Science in 1939 and was awarded an MSc with a First Class Honours award in chemistry a year later. He wanted to continue his studies but was "manpowered" to the laboratories at the Auckland hospital where he played a pivotal role in reorganising the biochemistry laboratory in particular, as well as many other aspects of the laboratory services required to support the war effort. Much of his work involved improvisation and creative thinking as essential supplies were limited because of the war.

After the war he developed an interest in endocrinology and reproduction and set up a small animal breeding facility. This gave him the idea that the most important requirement in human reproduction was the development of a method to time ovulation, similar to the occurrence of oestrus in animals. He thought that measurement of the hormones that produced oestrus was the answer and started pursuing this line of investigation.

The next major event in his professional life would change the course of reproductive medicine for the next 50 years. He received a scholarship to work in Edinburgh under Professor Guy Marrian FRS. Marrian was one of the discoverers of oestrogens and Jim set out to develop a chemical method of measuring oestrogens in the urine. It was not until 1955 that he was confident enough to publish his method and the paper has been awarded a Citation Classic by the Institute for Scientific Information. This paper has been cited over 1000 times. He also assisted in the development of a method for measuring urinary pregnandiol and for the first time the precise patterns of hormone activity during the various phases of a woman's reproductive life had been documented. Jim was awarded a PhD for this work. The quality and importance of this work is

demonstrated by the fact that the *Lancet* – one of the leading medical journals in the world – actually requested the privilege of publishing the results – quite a contrast to what happens for the rest of us who usually have to beg to have our work published.

In Edinburgh, Jim continued to study ovarian function and its relationship to clinical situations, and also contributed to the development of the oral contraceptive pill with Gregory Pincus in the USA. He was also part of the team who were the second in the world to use human gonadotrophin for ovulation induction. He received many offers to work in academic departments especially the USA but in 1962 he joined the Department of Obstetrics and Gynaecology at the Royal Women's Hospital in Melbourne, Australia, as First Assistant. Here he demonstrated his true ability and established, with the help of colleagues, a world class ovulation induction programme using human pituitary gonadotrophin. He developed technology and refined assay techniques so that these drugs could be used safely, without the substantial risk of high order multiple pregnancies that had previously been a feature of this treatment. (Many of the older people here will remember the media headlines in those early days when women gave birth to quintuplets or sextuplets after the use of what the media called "fertility drugs".) As a result of this work he developed the threshold theory of follicular development in the ovary which remains unchallenged to this day.

He further modified his test so that it could be used as a test of placental function and this was used extensively by his obstetric colleagues as a means of assessing fetal well-being during pregnancy.

During a sabbatical year in 1970 he gained a DSc from the University of Edinburgh and in 1971 he was given a Personal Chair in the Department of Obstetrics and Gynaecology at the University of Melbourne.

Having conquered the challenge of safely using gonadotrophins for ovulation induction, Jim turned his mind to other things. He collaborated with Harvard University in studying hormonal risk factors in breast cancer and this work was awarded the *Prix Antoine Lacassagne* from Paris as the most important contribution to the study of breast cancer in the year 1986. He worked with Carl Wood in the early days of the IVF programme by providing the timing for egg pick up based on hormone assays, and the methodology was also used in achieving the first IVF pregnancy in Britain.

Jim retired from the University in 1985 and was awarded the title of Emeritus Professor. Far from hanging up his laboratory coat and test tubes he continued to work in this field. Unlike many famous scientists who produce their best

work in their early days, I think Jim's greatest work has been produced in recent years and has been a result of his association with Doctors John and Lyn Billings whom he met in 1962, and with whom he continued to work right up till the end. Jim validated their observations on cervical mucus and fertility, and the challenges that arose from these observations no doubt stimulated him to develop the Home Ovulation Monitor, whereby a woman herself can accurately measure her ovarian hormones using a simple inexpensive home testing kit. No special laboratory training was required. Jim had, to a large extent, realised his vision of 50 years earlier in developing a simple low cost test for predicting ovulation.

In the context of the monitor, it is worth pointing out that not only did Jim work out the science behind it – converting a very labour intensive laboratory-only test to a simple D-I-Y procedure while still maintaining accuracy - a remarkable achievement in itself, but he essentially built and assembled all the components himself as well. This involved activities ranging from grinding out metal blocks on a lathe to preparing antisera for the actual test and everything in between. A truly remarkable achievement. Once in my naivete I said to him that his time would be better spent concentrating on writing papers rather than wasting time (as I saw it) on menial tasks like assembling meters. He replied quite seriously, almost affronted that anyone would suggest he would waste time:

“That's not wasted time. That's my thinking time!”

After that I stopped making “helpful” suggestions. The monitor allowed him to work with the Billings to study literally thousands of cycles in women in various stages of their reproductive lives and he developed a theory of ovarian function which takes account of these findings. Right up to the end he continued to work on this and other papers for publication.

Jim published over 200 papers and chapters in books and was made a Fellow (*Ad Eundem*) of the RANZCOG in 1981 and was a life member of the FSA and the Endocrine Society of Australia. He was made a Member of the Order of Australia in 2003 “for service to clinical research into women's health and reproductive issues and the development of the Home Ovarian Monitor”.

I think Jim's professional life could probably be best summed up in the following comment made in 2003 by the editor of the journal *Fertility and Sterility* after they had published a letter from him in response to an

article published in that journal:

"...In these days of hype, grossness and glitz, Dr Brown is a model of scientific practice who is even more imposing by the low profile that he has been able to keep over the last two decades. Perhaps these are the ideals and values for which we need to renew our subscription."

James Brown made an incredible contribution to medical science and was without peer in his field. We are greatly diminished by his passing.



Obituary to Emeritus Professor James Boyer Brown MSc NZ, MSc Melb, DSc Edin, PhD, FRANZCOG

Evelyn Billings

Jim was born on 7th October 1919 in New Zealand and educated at Auckland University College. After the war he received a national research Scholarship to travel to Edinburgh to work with Professor Guy Marrian. His interest became centred on measuring oestrogens in urine. During this time he developed a healthy wariness of using synthetic oestrogens to medicate women and predicted that there could easily result harm from this. Following work in Scotland as a biochemist, he returned to New Zealand to work as a Clinical Biochemist for the Auckland Hospital Board and as Assistant Director, Clinical Endocrinology Research Unit, Medical Research Council, University of Edinburgh.

Jim came to Melbourne in 1962 and worked as First Assistant Endocrinologist at the University of Melbourne where he was subsequently awarded a Personal Chair as Professor of Obstetrics and Gynaecology. He continued as Senior Associate and Emeritus Professor until his death.

We first met Professor Brown in 1963, soon after he arrived in Melbourne to take up the position in the Department of Obstetrics and Gynaecology. He was highly qualified in the field of endocrinology particularly in the study of female human reproductive hormones. He was recommended to Dr John Billings who had reached a particular stage in his work on

the self-recognition of fertility by the woman herself without drugs or devices. Jim had the skills to be able to test with accuracy the woman's expertise in defining her fertility following the guidelines set down for the Ovulation Method in its then current state of development.

He was most impressed with the skills of women in being able to recognise the signs of fertility and their ability to reliably follow rules with confidence. It was about this time that the Peak was defined and named. The woman could now predict within 11-16 days the end of the cycle and know that after the egg had died the couple was infertile. She knew that a new cycle would begin with menstruation, followed in due course by the maturing of the new egg, accompanied by the familiar slippery mucus. John Billings asked Jim Brown to verify this work with a hormonal study which he did gladly, marvelling at the ease with which the woman accomplished her observations and the accuracy of the recordings.

In the fifth edition of *The Ovulation Method* by John Billings there is an account of the hormonal proofs of the variations that can occur in many circumstances. This has shown how the cycle varies according to how early or late ovulation occurs and what influences those changes. Jim Brown taught the teachers to understand the behaviour of ovarian hormones, enabling them to interpret the daily recordings with accuracy. This led to confidence and simplicity in teaching and the statement that the Ovulation Method can be taught to and used by virtually every woman and couple who wishes to learn.

Jim was recognized as a man of integrity in the scientific world and he inspired trust. He was working in his laboratory on the idea of developing a small portable meter for use by the woman herself in the measurement of ovarian hormones to identify ovulation. The equipment used in the laboratory at that time was very large and cumbersome while the ovarian monitor developed by Jim was quick, accurate and portable.

By 1969 the Ovulation Method had advanced to include the understanding of the Basic Infertile Pattern and the Early Day Rules. Jim, by his generous efforts, validated the observations that the women made and the Calendar Method gave way to the positive identification of each pre-ovulatory day as either infertile or possibly fertile. The definitive Billings Ovulation Method™ was reached in the early 1970s. The Rhythm calculations ceased and as the Basal Body Temperature Method proved to be inaccurate it was abandoned also. The mucus symptom stood alone. The Billings Ovulation Method™ was available for every couple in every circumstance.

Retirement, in 1985, meant more work for Jim as he approached about one million hormonal assays for the BOM research. Jim was surprised and delighted by the clinical research which led to the development of the Ovulation Method. He gave of his time most generously in teaching the doctors, teachers and couples. He accompanied us on numerous overseas teaching trips. He was an inspiring travelling companion and enjoyed a good joke.

Jim never stopped working. The last 30+ years of his life were devoted to unravelling pathological conditions which affected the female cycle, causing infertility in women. Correction of these conditions has been very successful and the pregnancy rate for previously childless couples is very high. It was during this time that Jim explained "the continuum", showing the behaviour of the pituitary and ovarian hormones to be the same in each fertile cycle irrespective of its length.

In 1978 an International Conference was held in Melbourne. In his final remarks, in a paper entitled *Overview of the Ovulation Method*, John Billings said: "The greatest act of charity one can do for another is to teach them the truth. As St Augustine told us, there are no labours too great for loving hearts. *Credidimus Caritati* – we have put our faith in love! Love of God and love of the Child. From these flows love for all mankind."

In the early 1980s Jim was introduced to Professor Erik Odeblad of the University of Umea in Sweden, who had made studies of cervical mucus his life's work. It soon became obvious that study of the cyclical changes in the mucus, produced at the cervix, confirmed the observations of the behaviour of the mucus patterns, as described by the women during their cycles and used by the couples as the Ovulation Method for fertility regulation. Thus Professor Odeblad provided another validation of the Ovulation Method and we have collaborated with him as his research continues.

Pope John Paul II's message in *Evangelium Vitae* was to "teach with truth and love" – so very appropriate today when the young people are so beset with hurdles of physical and moral harm, and the baby is unloved.

Vale Jim – you worked so hard for the neglected and unloved, to extract the truth from the mysterious reproductive physiology of the woman and to present it to the world with truth and love.



In Memory of Professor James Brown

Erik Odeblad

In the late 1940s and early 1950s I was busy finishing my medical studies and writing my MD thesis on the phosphate metabolism in the ovaries. I heard one day about the visit of a Dr James Brown from Scotland. He was invited by Prof Axel Westman, a prominent obstetrician and gynaecologist with great interest in endocrinology. Time did not permit me to meet Dr Brown – I was also at that time preparing to go the University of Berkeley, California, to study for one year. However, after returning home we started to use “Brown’s chemical method” for measuring estrogens as a complement to the bioassay, but I concentrated my research on the cervical mucus and the application of nuclear magnetic resonance (at that time a “new” method).

In 1967 there was an International Congress for Obstetrics and Gynaecology in Sydney and I heard again about “Dr Brown’s method”. In 1982 there was a large international congress for NFP in Acapulco, Mexico, and Dr Lyn Billings gave a presentation and demonstration of Professor Brown’s new Ovarian Monitor for measuring estrone and pregnandiol in urine. The next year, 1983, I came to Melbourne for five weeks to research cervical mucus of women who were also being monitored by measurement of urinary pregnandiol and estrone. On that occasion I had the great privilege to meet Dr Jim Brown and his team and, of course, also Drs John and Lyn Billings and their many collaborators and Billings Method teachers.

Very soon I realized the high quality of Jim Brown’s scientific work. We had many discussions and I remember especially his scientific philosophy: When doing research one must first think of what and how to do it, then think once more if it is possible, and then DO it.

In 1983 we collected together a large amount of scientific material of cervical mucus samples and steroid measurements. I was happy that all these data confirmed the previous results I had obtained about the mucus types L, S and G which I had obtained in Sweden.

About a decade later it became clear that there existed other components in cervical mucus, the P-type mucus (with several subtypes), and the Z-secretion, probably originating in the isthmus which is located just above the cervix. Because I had been able to get photographs of most of the cervical mucus slides in Melbourne, I had the possibility to continue

this research and relate it to the urinary steroid measurements made at that time in Melbourne.

For me, therefore, the work with Jim Brown is continuing and, hopefully, new results will be available in the near future.

Jim's work is also continuing in all the Billings teaching centres around the world where the hormonal correlation and verification of the Billings charts has had such an important impact in helping couples to use the Billings Method for achieving or avoiding pregnancy. It is a wonderful illustration of how careful, basic research will ultimately help people to live normal, happy lives – the ultimate purpose of all medical research.



Professor Emeritus James B Brown
Addressing OMR&RCA Conference, Melbourne, Australia, 2009

Dear WOOMB Family:

We are all praying for Jim, but specially thanking our dear Lord for the gift his life was to all of us.

I can imagine how he is enjoying, with John, all the mysteries of the ovarian cycle that must have been shown to him in Heaven.

Together with the deep sorrow I feel to know about his death, I feel a great joy for the gift of his life. Jim is one of the persons who influenced deeply my way of looking at people, he showed me the face of Christ and taught me about the meaning of true love.

I also want to thank you all once more for your invitation in May to visit Melbourne, which allowed me to be with Jim and speak with him.

Please tell Wendy and all their family how I would love to be there at this moment, and tell them my heart is with them.

Receive all my love in Jesus,
Pilar Vigil, Chile

Please pass on my deepest sympathy to Dr James Brown's wife Wendy and family. He was a true gentleman and a wonderful and wise person. He will be sadly missed by us all. Love and God's blessings.

Michele Lando, Townsville, Australia

Dear Kerry and the wider Billings Family,

It is with great sadness that I read of Professor Brown's passing. His great work with the Drs Billings in natural fertility regulation and their strong and close friendship is well known.

Please be assured of my prayers for Professor Brown's wife, children - and the Billings 'family' - for their loss.

God Bless

Cheryl Curnow

Please convey our sorrow to Prof James Brown's family at the loss of such a wonderful human being. I will be remembering him every time I teach about the hormones in the Billings Method as a longtime friend. His contribution to understanding how women's cycles work has been outstanding.

yours,

Justin and Sue Fryer, Canada

"The BOM Italian Family is deeply grieved for Professor Brown's passing away. The memory of his moral and scientific integrity, that allowed him to put his brilliance and his important research in the service of all mankind, still lies in us. We remember him with love and gratitude in our prayers, aware that now he lives in endless joy, together with his newly found friends in heavens."

Elena Giacchi, Rome, Italy

I am very saddened to hear of Dr. Brown's death, and will certainly add him to our prayer list here at the Couple to Couple League.

His work has been instrumental in helping me to understand mucus patterns and I pray that soon the Couple to Couple League will understand more fully the impact he has had on our understanding of NFP.

God bless him and his family,

Vicki Braun

Project Manager/Consultant

The Couple to Couple League, USA

Please include our Cairns Family in the condolences for our very dear Vale Emeritus Professor James Boyer Brown, We are truly privileged to have known him and are saddened to hear of his passing. May God bless him with his eternal reward, and console his family with much love and peace. We will keep them in our prayers.

God bless you all.

Irma , Sharelle and Trish and families, Cairns, Australia

It was with great sadness I heard the news of Professor Brown's departure from this life. His untiring work made an enormous scientific contribution to the Billings Ovulation Method and to the lives of so many women and couples regarding their fertility. His work will live on and we shall miss him greatly.

Warmest regards,

Veronica Pierson

The BOM Trust, London, UK

Thanks for communicating this news, although it's really sad, but we are quite sure that he is received with Joy in Heaven for the wonderful mission he accomplished together with the Drs Billings.

Prof Mounir Farag – Mervat & Habib Kozman
St Joseph Institute for the Family , Bioethics and WOOMB, Egypt

All of us here are sad to know the death of Prof. James Brown. His work will be remembered in the history of mankind. Great man, great work. We pray for the eternal peace of his soul.

Pervez & Catherine, Pakistan

I was sad to hear of the recent death of Prof. James Brown. He was a remarkable man who achieved so much in his lifetime. An excellent scientist, but easily approached for help and information. It was a pleasure to meet him and to benefit from his teaching. His legacy to human reproductive science will live on.

Please forward his Scottish BOM friends' sincere condolences to his wife and family. We will keep them in our thoughts and prayers.

Dr Angela McCallum
Fertility Care Scotland

Queridas hermanas en el Método Billings, con tristeza hemos recibido esta noticia y estamos consternados, ya que se ha ido otro hombre grande para la familia y la humanidad sobre todo los que estamos trabajando en el MOB.

Nos unimos a las oraciones y plegarias por el eterno descanso del Profesor James B. Brown, que descanse en paz.

Estaremos pidiendo tambien Marian y Marie que nos han podido estar en estos momentos para darle un adios al Profesor, estaremos pidiendo tambien por ellas y la familia del profesor.

Raúl Armenta y Lupita Rodriguez, Mexico

Please accept our sincere condolences and be assured of our prayers as we acknowledge the death of a great man. He was a noble scientist who, in the pursuit of truth, helped to reveal the beauty and intricacy of female fertility to the world. May we continue to strive even more earnestly and courageously to teach the Billings Ovulation Method to the whole human family. We hope and pray that all may know how wonderfully we are made and joyfully encounter the Creator, our Lord and Saviour, Jesus Christ.

May his soul rest in peace.

Dr Karen MacDonald
President of WOOMB Nova Scotia, Canada

We are much saddened by the death of such a brilliant pioneer of the original Billings Team.

Please accept our condolences on the passing of Professor James Brown and forward our deepest sympathy to his wife Wendy and to his children.

We all know he is in a better and happier place with his Lord.

God bless you all,

Elizabeth Lester on behalf of Dr Helen Davies and all from NAOMI Billings (England)

(NAOMI is The National Association of Ovulation Method Instructors founded in 1978 after Dr Kevin Hume's lecture in 1977 at Guildford University, Surrey, UK)

Dear Friends

Please accept my condolences and prayers on the death of Professor James Brown, a pillar in the Billings Family for so many years.

Professor Brown was an exceptional and humble man, and an outstanding man of science. We give thanks for his generous, faith-filled YES to putting his God given gifts at the service of life, and in a special way at the service of the God of Life, through his support and dedicated commitment to the Billings Ovulation Method.

He once told me that he entered the field of science so he could discover truths it revealed. He was blessed to not only discover new truths in his field of science, but to also become a great witness to the scientific truth and simplicity of the Billings Ovulation Method. He has been a humble and extraordinary witness to these truths.

We have much to thank him for. We do so now, by expressing our gratitude to God for Jim's life and the talents He gave him.

I will miss him and in a special way miss seeing his sparkling clear eyes eager to discover truth, eyes which also reflected a purity of heart that saw God in His creation.

May he delight in the God of truth and love, and in the company of those he worked with in the Billings Family.

In Jesus and Mary,

Love and prayers,

Fr. Joe Hattie, OMI
Office of Marriage and Family
Archdiocese of Halifax
Canada



Blessed memories of a wonderful man and true friend



Three great scientists
Erik Odeblad, Jim Brown and John Billings

Natural family planning fosters conjugal love and defence of women, says expert



Vatican City, Oct 13, 2009 / 03:58 pm (CNA).- Last Friday, at the Synod for Africa, the expert Italian gynaecologist Elena Giacchi said that natural family planning through the Billings Method “fosters conjugal love, family unity, respect for women and generous openness to welcoming life.”

During her remarks at Synod Hall in Vatican City, Giacchi said that the simplicity of the Billings Method makes it accessible to all couples “regardless of their educational level, religion or socio-economic state,” whether they are Catholic, Muslim, Hindu or profess any other creed.

Giacchi, who belongs to the Centre for the Study of Natural Family Planning at the Sacred Heart University of Rome, explained to the assembly that, “Couples can manage their fertility in a natural way, both for obtaining as well as for avoiding pregnancies in all the situations of fertile life.”

This Method, she said, also contributes to “promoting the family and responsible procreation in a way that respects life, love and conjugal fidelity; promoting the dignity of women; preventing abortion; avoiding the use of artificial fertilization and helping couples with fertility issues to obtain pregnancy in a way that respects ethical values; preventing sexually transmitted diseases; [and] teaching young people mature sexuality that encompasses the spiritual, bodily and psychological dimensions.”

The Billings Method, Giacchi said, “helps to spread human and Christian values, contributing to our pastoral commitment and to evangelization.”

Acknowledgement

OMR&RCA acknowledges partial funding of this publication by the Commonwealth Department of Health and Ageing through a grant which is given to the Australian Catholic Bishops Conference and is administered by the Natural Family Planning Board of Management.

ANNUAL REPORT 2009 WOOMB SPAIN

The activities of WOOMB SPAIN, listed below, are those that our teachers throughout Spain have reported to us, together with those organized from the head office of the association. They are from the end of 2008 to the end of 2009.

Teaching to couples: 160 courses counting both couples and women.

Premarital programs: In general, teachers collaborate with their parishes by giving introductory lectures in these programs. The majority of the couples who learn the BOM come from these courses.

Collaboration with the "COF" of the Diocese. Some teachers work with the Family Care Center in the diocese. Recently some have joined with MotherNet, a movement to help women with pregnancy difficulties, including young women contemplating abortion.

Affective-sexual Education programs given to teenagers of secondary education. A teacher has started developing the program TeenSTAR (Guadalajara).

Activities of the coordinating center WOOMB SPAIN:

Course of training in the Billings Ovulation Method from October 2008 to April 2009.

Teacher Training Program to those teachers that could not attend the one given by Marie Marshall and Marian Corkill in May 2008.

Collaboration in a course on natural methods: Two teachers gave the teaching of the Billings Ovulation Method in a course of natural methods that was given in a COF of a diocese near Madrid.

We have finished the translation of the book *Teaching the BOM, Part 1* and we are preparing the rest of the books.

Upskilling day for teachers.



New Board of WOOMB France Billings LIFE

President : Dr Caroline Terrenoir

Secretary : Mrs Marie Renard
(to whom requests should be addressed at woombfrance@yahoo.fr)

Treasurer : M. Xavier Gariel

The board of administrators is composed of :

Mrs Béatrice Bertrand
M. Xavier Gariel
M. Olivier Grincourt
M. Jean-Christian Jouve
M. Laurent Miribel
Mrs Marie Renard
Dr Nicolas Saboly
Dr Caroline Terrenoir
Dr David Valancogne

The new team is happy to work together to promote and teach the Billings Ovulation Method in France and French speaking countries.

Dr Caroline Terrenoir, Marie Renard and Xavier Gariel
for WOOMB France Billings LIFE



Francois Terrenoir, Dr Lyn Billings, Dr Caroline Terrenoir, April 2009



Gerard and Marie Renard, October 2009



Xavier and Marie-Pierre Gariel

Report of Billings Ovulation Method™ Teacher Training Program, Khushpur, Pakistan, 30th-31st January 2010

A two-day Billings Ovulation Method™ training program was recently held at Khushpur, Faisalabad. Twenty one couples (catechists and their wives) and 18 single catechists together with their married teaching staff attended this training program totalling 65 participants. A blind couple, with whom national team was already working for last 3 years, was especially invited to the training program. This training program was held in connection with the second phase of the NFP syllabus to be launched at St. Albert's Catechists Training Center. WOOMB Pakistan had already launched the first phase of the NFP syllabus in September 2009. In this National Catechist Training Center the participants belong to 5 different dioceses of Pakistan.

Program started with a prayer by Br Dennis, Principal, National Catechist Training Center, followed by the welcome speech. In his talk he said that promoting Natural Family Planning among the masses is a rare apostolate and very few people are working in this field. He also expressed his full support to the WOOMB Pakistan team for their efforts to include NFP as part of their syllabus.

Regarding the second phase of the syllabus, WOOMB Pakistan has recently translated Billings (Australia) research on re-productive health into Urdu.

Three booklets of latest research work were distributed among the participants. The students of the Training Center will use these books as part of their syllabus. WOOMB Pakistan will launch the third phase of the syllabus in April 2010. Meantime, the national team will empower the local married staff of the Catechist Training Center, who will eventually teach this method to the Catechists in future. In this way all future graduate catechists of the institute will also be trained NFP teachers.

This was an advanced training program in which the science behind the menstrual cycles of breastfeeding mothers, pre-menopause women, post-pill women and menarche were discussed. Before these topics the previous teaching of NFP (first phase of the syllabus) was assessed and there was group presentations from the participants in which they presented various topics with their explanation.

At the end of the program, a proposed plan of action was presented.

According to this plan all catechists with their wives will have two classes of NFP fortnightly which will be conducted by the local trained married staff of the institute as well as the Diocesan Family Life Director of Faisalabad diocese. Bro. Dennis agreed to this proposal and the Institute will officially commence NFP classes from February 2010.

The written evaluation of the participants showed that they are very much interested to learn this Method not only for the planning of their own families but also for the community to which they will cater in the future as catechists. The especially invited blind couple is planning to transfer the basics of NFP into Braille for other members of their community.

Pervez Roderick
Pakistan



Trainee teachers attending program in Khushpur, January 2010



WOOMB Philippines

You will recall that in our last edition of the *Bulletin of OMR&RCA* we asked for your prayers for Linda and Raymond Ganar, Coordinators of WOOMB Philippines and for all the people whose lives and homes had been devastated by the twin Typhoons Ondoy and Parma on September 26 and October 3 last year.

You will rejoice with us to learn that on February 2 we had a communication from the Ganars to tell us that they have recovered from the floods, that their internet and telephone connections were reestablished (only in late January) and that life is getting back to normal. You will be as astounded as we were when we received the following report from them of the activities of WOOMB Philippines in 2009:

Teacher Training Courses

There were a total of 15 training courses all over the country from January 2009 to November 2009.

Number of Couples who are practising BOM

As of January 2009 – December 2009

No. of clients from Pill to BOM	8,108
No. of clients from Injectable to BOM	4,054
No. of clients from IUD to BOM	2,642
No. of clients using withdrawal to BOM	7,409
No. of users of other method to BOM	3,577
Breastfeeding mothers who are practising BOM	5,641
Herbal to BOM	953
Achieving Pregnancy	93



Billings Ovulation Method™ and Physiology of Lactation and its Effects on Fertility

Dr E L Billings



The benefits to both mother and child which result from breast-feeding provide a good example of the wisdom of living in accordance with the laws of nature. The Billings Ovulation Method™ is very appropriate for use during lactation because it provides for the recognition of infertility in the absence of ovulation – it is just as easy to recognize infertility as it is to recognize fertility, and to learn rules which can be applied in either circumstance. *[Recognition of the patterns of infertility and fertility during breastfeeding and weaning will be discussed in more detail in the next issue of the Bulletin.]*

During pregnancy the glandular tissue of the breasts has been preparing for the production of milk, under the influence of pregnancy hormones. After birth, the stimulus caused by the baby's sucking stimulates the activity of the pituitary gland through that part of the brain called the hypothalamus. The more the demand for milk, the more the breast will respond by producing milk. Nature has provided mother and baby with many reflexes, for example, the rooting reflex of the baby whereby he turns his head to take the nipple when it touches his cheek, the sudden "let-down" of milk when he sucks and the production in the mother of the pituitary hormone, oxytocin, which not only causes the let-down of milk but also causes the uterine muscle to contract so that it expels clots and lochia, thereby promoting the return of the uterus to its normal size and tone. Colostrum comes from the breasts for the first few feeds and supplies the baby with an invaluable source of antibodies to protect him against infection. The colostrum also has a beneficial effect upon the delicate skin of the nipples and should not be washed away with soap.

The breast-milk continues the protection provided by the colostrum, guarding not only against infection but also against the development of certain allergic disorders, for example, allergy to cows' milk. Breast-milk is a physiologically active tissue fluid containing important enzymes.

The baby should be suckled when he is hungry, which not only satisfies him but ensures an adequate supply of milk while helping to prevent painful engorgement of the breasts. High levels of the hormones needed for production of breast-milk will usually suppress the hormones needed for a return to fertility. Promotion and maintenance of a good supply of milk will usually help to postpone another pregnancy until the baby is at least many months old and is thriving. Even under ideal conditions with a vigorous baby who sucks well, ovulation may return as soon as 6 weeks after delivery but as long as the baby is being totally breast-fed and "mothered" with the breast, without recourse to a pacifier, it is unusual for ovulation to return until more than 3 months after the birth.

Each mother and baby duo is unique. The length of time which elapses between the birth and the first ovulation varies with different women but sooner or later ovulation will occur even if the baby remains fully breast-fed and is thriving and contented. More often ovulation returns when weaning is commenced by giving the baby solid food. In some cases, there is warning of the likelihood of the return of ovulation in a spontaneous decline in the amount of milk so that the baby is no longer satisfied, or in the occurrence of bleeding. In any case, the daily charting of the cervical mucus will indicate what is happening.

Intercourse during lactation may be dry and painful because of the thinning of the vaginal epithelium resulting from the low level of circulating oestrogens. The absence of cyclical oestrogenic mucus from the cervix also contributes to the discomfort. A rapid and effective neuro-hormonal reflex operates during sexual stimulation to provide vaginal lubrication and facilitate coitus. Thus, if the emotional climate is loving and considerate on the husband's part, there will be a physiological response by his wife which will overcome the problem.

A thoughtful husband will readily appreciate the effect of fatigue on his wife who is spending many hours each day caring for her baby, which is a new and surprising experience. The father who develops a close bond with his child early in life acquires many insights into his role in the family.

The frequency and duration of suckling are important in establishing and maintaining an adequate supply of milk. The mother-baby relationship is unique and many factors influence it. Some babies are born vigorous,

wakeful and demanding so that comforting and suckling are frequent. Mothers of these babies usually find that infertility is prolonged and easily identified.

Some babies who are fat, sleepy and happy are not so demanding; they spend hours asleep and are often described as "good babies". While they may stimulate the secretion of enough milk for their own well-being, the suppression of ovulation may not be so effective. This may lead to ovarian activity early in lactation with the rise in oestrogens reflected by changing patterns of mucus and even early ovulation.

If the supply of breast milk appears to be failing, the mother may decide to proceed with weaning or to make additional efforts to establish a better supply. The restoration of full breast-feeding may be achieved by increasing the frequency of suckling episodes and by the restoration on night feeds. An increased supply of milk may be stimulated by physical rest, nourishing food and extra fluid for the mother together with more frequent feeding of the baby. The woman may observe that the re-establishment of a good supply of milk causes the disappearance of indications of returning fertility that she has observed in the cervical mucus pattern. On the other hand, if there has been the reappearance of the mucus but no ovulation as yet, lessening the number of feeds and the advancement of weaning may be quickly followed by the development of an ovulatory pattern of mucus leading to a Peak symptom and then a menstrual bleed.

Charting should commence from 3 weeks after the birth or as soon as the lochia diminishes sufficiently for the woman to identify the sensation at the vulva. For many women this sensation will be one of total dryness, in which case, abstinence is not required to establish a Basic Infertile Pattern and the couple can commence intercourse applying the Early Day Rules of the Billings Ovulation Method™. If the woman does not experience dryness, 2 weeks of abstinence should be suggested while she makes her first chart. As soon as she reveals, by discussion of her record, that she understands her charting, the couple may apply the Early Day Rules with intercourse available on alternate evenings of any unchanging pattern which indicates infertility.

There must be careful attention to the mucus pattern when there are any indications of the possibility of the return of fertility and it is recommended that the couple abstains from genital contact until the pattern is revealed, if it is the intention to avoid a further pregnancy. The rise and fall of hormones, which may occur at this time, can produce patches of mucus which may or may not result in the return of fertility.

The return of bleeding does not necessarily mean that ovulation has returned. When the mucus pattern reveals increased hormonal activity there may be some bleeding a week or so later as a further manifestation of the fluctuating hormonal pattern. This should not be confused with the occurrence of ovulation which can be clearly recognized by the Peak mucus symptom – a changing developing pattern, ending with the slippery sensation (and perhaps a swollen vulva), followed by an abrupt change to “no longer slippery”.

It is important to note that the discharge which constitutes a Basic Infertile Pattern during lactation may be peculiar to that time, sometimes being fairly profuse and milky. When the normal cycles return, a Basic Infertile Pattern of discharge must be reassessed. Even if the discharge appears to be the same as that recognized as the Basic Infertile Pattern prior to the return of fertility, it should not be assumed to be infertile until three cycles have been studied.

The sensible encouragement given by a cheerful, experienced teacher of the Billings Ovulation Method™ can accomplish wonders in assisting a timid young mother, both in adapting to the dramatically new lifestyle occasioned by the birth of her baby and in managing her fertility during lactation and the return to normal cycles. Regular contact between teacher and couple is advisable during what can be a rapidly changing and quite volatile time. A confident, relaxed teacher will ensure a confident, relaxed couple able to manage their fertility happily during this exciting time.

This article is an extract from *Billings Atlas of the Ovulation Method: the mucus patterns of fertility and infertility* by Evelyn L Billings, John J Billings and Maurice Catarinich, Fifth Edition 1989, pp 56-59, revised 2010.



Some Aspects on the Biosynthesis of Progesterone and Estrogens

Erik Odeblad



Progesterone and estrogens are key hormones in the regulation of the signs of the various phases of the menstrual cycle and therefore of the greatest importance in natural family planning. Numerous studies have shown that the estrogens increase and dominate in the preovulatory phase and that both estrogens and progesterone are necessary for a normal postovulatory phase of the cycle. A sudden drop in their concentration initiates menstruation.

The production of estrogens and progesterone occurs from cholesterol in a complicated chain of biochemical processes, see Fig. 1. Cholesterol is mostly regarded as the villain of arteriosclerosis but in the present context it is the necessary starting point. Cholesterol itself comes from two sources, one exogenous from food and one endogenous, during its bio-synthesis from smaller molecules, mainly acetic acid.

The conversion of cholesterol to reproductive hormones (Fig. 1) occurs stepwise with the help of enzymes. Most of these enzymes are so-named CYP enzymes each one identified by a suffix of letters and figures according to an internationally accepted nomenclature. The collective notation CYP stands for Cytochrome oxidase P450. This means that the enzymes can oxidize organic chemical compounds in the body so that they become more soluble in water and more easily excreted in the urine, something that happens with many toxic chemicals and also with pharmaceuticals. This way of getting rid of certain molecules is in fact also essential in physiological processes. It contributes to a rapid decrease in estrogens and progesterone, thus initiating menstruation; see in Fig. 2 how CYP enzymes attack progesterone and estradiol.

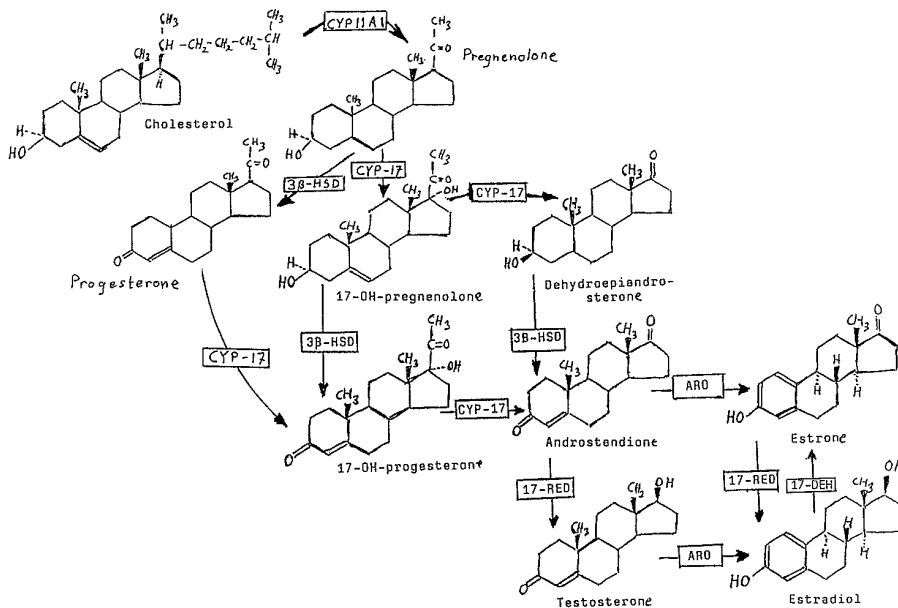


Fig. 1

Pathways of the biosynthesis of estrone and estradiol from cholesterol. This diagram is not complete. There are many more ways of conversion of progesterone, e.g. to pregnandiones which are thermogenic. Also the pathways to corticosteroids are not shown.

The presence of CYP enzymes may vary due to many factors, for example:

- (1) There seems to be variation according to geographic location. For example, duplication of the genes for CYP21 has been reported to be 14 p.c. for Italians, but only 3 p.c. for Swedish people.
- (2) Some alimentary factors are also important. Grape juice suppresses CYP 3A4 - the break-down of estradiol (and most probably also estrone) diminishes, leading to higher estrogenic action with increased mucus secretion, while St John wort (a sedative) has the opposite effect.
- (3) Smoking increases CYP 1A2, so estrogen break-down increases with reduced estrogen stimulation of cervical mucus secretion.
- (4) Pharmacological treatment may in similar ways have important effects; Erythromycin suppresses CYP 3A4 with increased estrogen effects.
- (5) Bacteria often produce CYP enzymes. E.coli secretes CYP 1A1 which, however, normally has little reproductive effect.

(6) Several enzymes in the first step of progesterone and estrogen production are present in the liver. Hepatitis may therefore affect reproduction but these effects are less well documented.

A look at Fig. 1 indicates that the final steps in estrogen production are regulated by CYP 19. This enzyme is also named aromatase because it makes the A-ring in the estrogens unsaturated (aromatic). Drugs reducing its action are called aromatase inhibitors and are used to suppress estrogen action. They are used for the treatment of estrogen dependent tumors, e.g. some forms of breast cancer.

An important piece of information from Fig. 1 is that the production of estrone and estradiol seem to run in parallel. This implies that an increase in estradiol production is also accompanied by an increase in estrone production. A minimal interconversion between estrone and estradiol may occur but it is negligible. May I also remark here that the "third" natural estrogen, estriol, is of little interest; its action is very weak.

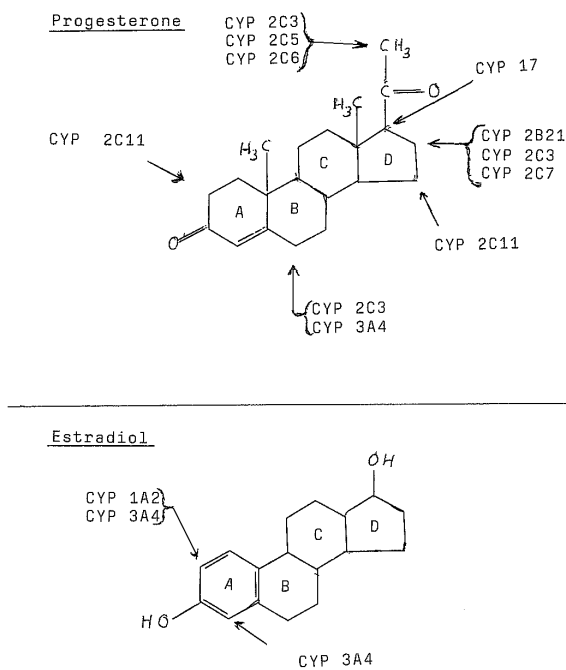


Fig. 2

These formulas for progesterone and estradiol indicate with arrows where different CYP enzymes perform the oxidating reactions.

Accordingly, when determining estrogen levels we can equally well use estradiol or estrone because the quotient estrone/estradiol is approximately constant, a fact that was found by James Brown early in his research and stimulated him to develop his Ovarian Monitor.

As regards progesterone, its excretion occurs after conversion to pregnandiol. It should also be mentioned here that progesterone is not in itself thermogenic but it is one of its metabolites, pregnandione, which has the effect to increase the basal body temperature.

References:

The following two books contain indices making it possible to find all the information on steroid hormones and enzymes in this paper:

King, R.J.B. and Mainwaring, W.I.P., *Steroid-Cell Interactions*, Butterworths, London, 1974

Ortiz de Montellano, Paul R., Editor: *Cytochrome P450 Structure, Mechanism and Biochemistry*, Plenum Press, New York and London, Second Edition, 1995



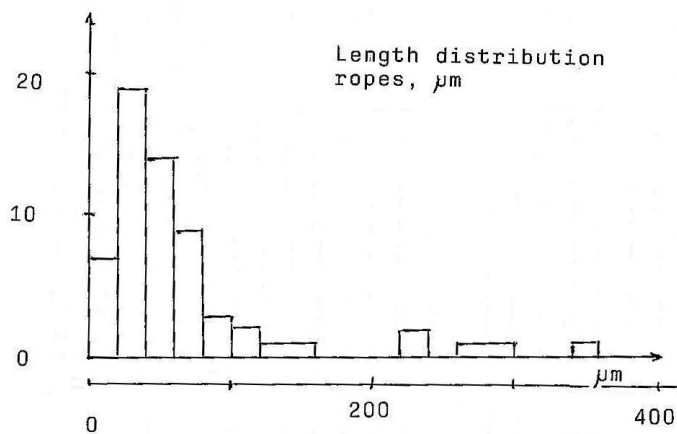
Erratum

Bulletin of OMR&RCA

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Page 6, Fig. 3

"20" should read "200" on horizontal scale - see corrected image below



Efficacy of a Theory-Based Abstinence-Only Intervention Over 24 Months

A Randomized Controlled Trial With Young Adolescents

John B. Jemmott III, PhD; Loretta S. Jemmott, PhD, RN; Geoffrey T. Fong, PhD

Arch Pediatr Adolesc Med. 2010;164(2):152-159. (reprinted with permission)

ABSTRACT

Objective: To evaluate the efficacy of an abstinence-only intervention in preventing sexual involvement in young adolescents.

Design: Randomized controlled trial.

Setting: Urban public schools.

Participants: A total of 662 African American students in grades 6-7.

Interventions An 8-hour abstinence-only intervention targeted reduced sexual intercourse; an 8-hour safer sex-only intervention targeted increased condom use; 8-hour and 12-hour comprehensive interventions targeted sexual intercourse and condom use; and an 8-hour health-promotion control intervention targeted health issues unrelated to sexual behavior. Participants also were randomized to receive or not receive an intervention maintenance program to extend intervention efficacy.

Outcome Measures: The primary outcome was self-report of ever having sexual intercourse by the 24-month follow-up. Secondary outcomes were other sexual behaviors.

Results: The participants' mean age was 12.2 years; 53.5% were girls; and 84.4% were still enrolled at 24 months. Abstinence-only intervention reduced sexual initiation (risk ratio [RR], 0.67; 95% confidence interval [CI], 0.48-0.96). The model-estimated probability of ever having sexual intercourse by the 24-month follow-up was 33.5% in the abstinence-only intervention and 48.5% in the control group. Fewer abstinence-only intervention participants (20.6%) than control participants (29.0%) reported having coitus in the previous 3 months during the follow-up period (RR, 0.94; 95% CI, 0.90-0.99). Abstinence-only intervention did not affect condom use. The 8-hour (RR, 0.96; 95% CI, 0.92-1.00) and 12-hour comprehensive (RR, 0.95; 95% CI, 0.91-0.99) interventions reduced reports of having multiple partners compared with the control group. No other differences between interventions and controls were significant.

Conclusion: Theory-based abstinence-only interventions may have an important role in preventing adolescent sexual involvement.

INTRODUCTION

Adolescents risk the deleterious consequences of early sexual involvement including human immunodeficiency virus (HIV),¹ other sexually transmitted infections (STIs),² and unintended pregnancies.³⁻⁴ In the United States, these risks are especially great among African American adolescents.^{2, 5-6} In 2005, 17% of adolescents in the United States were African American but 69% of adolescents with HIV/AIDS were African American.⁵ Rates of STI are the highest among African American individuals and adolescents, particularly adolescent girls.² Pregnancy rates have been higher among African American adolescents than among their Hispanic and white counterparts.⁷ Adolescents who initiate sexual intercourse at younger ages have a greater risk of STI⁸ and pregnancy⁹ and report more sexual risk behaviors including multiple sexual partners.¹⁰⁻¹¹

Although considerable research suggests that behavioral interventions can reduce sexual behaviors related to risk of STI among adolescents,¹²⁻¹⁴ including younger adolescents aged 11 to 15 years,¹⁵⁻¹⁸ a public policy debate has revolved around the appropriateness and efficacy of different sexual risk-reduction interventions. Some have advocated abstinence interventions; others have advocated comprehensive interventions—abstinence and, for sexually active adolescents, condom use. Abstinence interventions have been criticized for containing inaccurate information, portraying sex in a negative light, using a moralistic tone,¹⁹⁻²⁰ and risking unintended adverse consequences.²⁰⁻²² This debate notwithstanding, the United States has primarily funded and promoted abstinence education both in the United States and abroad,²⁰ and many states have mandated that HIV/STI education for children stress abstinence.²³⁻²⁴

Despite the widespread implementation of abstinence interventions and the controversy regarding their appropriateness, few randomized controlled trials have tested their efficacy.^{12-14,22} This has led to calls for more rigorous abstinence intervention research.^{12, 20, 22, 25} The ideal abstinence intervention would incorporate principles of efficacious HIV/STI risk reduction behavioral interventions. It would draw on formative research on the population and behavior change theory to address motivation and build skills to practice abstinence; it would not be moralistic, and it would not stress the “inadequacies” of condoms.

Here we report the results of a trial regarding the efficacy of such a theory-based abstinence-only intervention. African American students in grades 6 and 7 were randomly assigned to an 8-hour abstinence-only intervention, an 8-hour safer sex-only intervention, an 8- or 12-hour combined abstinence and safer-sex intervention, or an 8-hour health-

promotion control group. We hypothesized that fewer participants in the abstinence-only intervention than in the control group would report ever having sexual intercourse by the 24-month follow-up.

A common shortcoming of behavior-change interventions is that efficacy is demonstrated in the short term but disappears at longer-term follow-up. This may particularly be a problem for abstinence interventions.¹⁵ Unlike many risk behaviors (eg, cigarette smoking, drug use), sexual intercourse is an age-graded behavior; the expectation is that people will eventually have sexual intercourse. We designed a multifaceted intervention-maintenance program tailored to each intervention to extend the efficacy of the interventions. A secondary hypothesis, then, was that the intervention-maintenance program would enhance intervention efficacy.

METHODS

PARTICIPANTS

The participants were 662 African American students in grades 6 and 7 who were recruited from 4 public middle schools that serve low-income African American communities in a city in the northeastern United States; they were recruited between September 2001 and March 2002 via announcements by project staff in assemblies, classrooms, and lunchrooms, and letters to parents or guardians for the Promoting Health Among Teens (PHAT) Project, which was designed to reduce the chances of adolescents developing devastating health problems including cardiovascular diseases, cancers, and STIs, including HIV.

PROCEDURES

The Institutional Review Board of the University of Pennsylvania (approval No. 387200) and the Research Ethics Board of the University of Waterloo approved the study. African American students in grades 6 and 7 at the 4 participating schools who had written parent or guardian consent were eligible to participate. In this randomized controlled trial, students were stratified by age and sex and, using a computer-generated random number sequence, randomly allocated to an 8-hour abstinence-only intervention, an 8-hour safer sex-only intervention, an 8-hour comprehensive intervention, a 12-hour comprehensive intervention, or an 8-hour health-promotion control intervention. They were also randomly assigned to intervention maintenance or no intervention maintenance and to a group of 6 to 8 participants. One researcher conducted the computer-generated random assignments and distributed the information to other researchers who executed the assignments. Adolescents were enrolled in the study in 4 cycles or replications, 1 at each

of 4 schools. The Figure shows the number of adolescents randomized to each condition. The intervention and data collection sessions were implemented on Saturdays in classrooms at the participating schools.

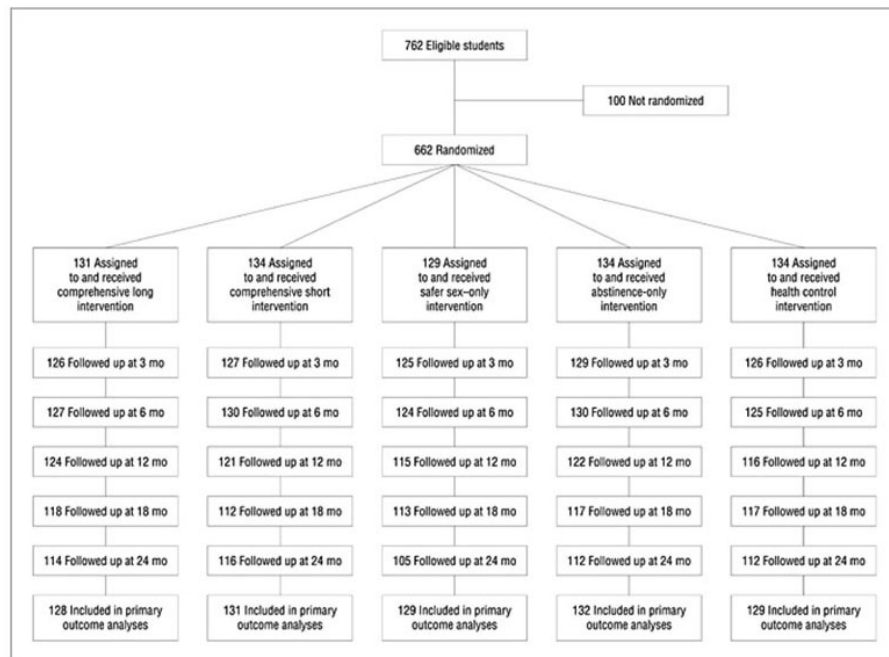


Figure. Progress of participating African American students in grades 6 and 7 through the trial. Students who were not followed up were absent at the time of the follow-up session and failed to attend the make-up sessions for unknown reasons.

EXPERIMENTAL CONDITIONS

The interventions were based on social cognitive theory,²⁶⁻²⁷ the theory of reasoned action,²⁸⁻²⁹ and its extension, the theory of planned behavior.³⁰ They were highly structured, and facilitators implemented them following intervention manuals. Each intervention involved a series of brief group discussions, videos, games, brainstorming, experiential exercises, and skill-building activities. Four of the interventions consisted of 8 1-hour modules implemented during 2 sessions, and 1 consisted of 12 1-hour modules implemented over 3 sessions. All 5 were pilot tested.

Abstinence-Only Intervention

The 8-hour abstinence-only intervention encouraged abstinence to eliminate the risk of pregnancy and STIs including HIV. It was designed to (1) increase HIV/STI knowledge, (2) strengthen behavioral beliefs supporting abstinence including the belief that abstinence can prevent pregnancy, STIs, and HIV, and that abstinence can foster attainment of

future goals, and (3) increase skills to negotiate abstinence and resist pressure to have sex. It was not designed to meet federal criteria for abstinence-only programs. For instance, the target behavior was abstaining from vaginal, anal, and oral intercourse until a time later in life when the adolescent is more prepared to handle the consequences of sex. The intervention did not contain inaccurate information, portray sex in a negative light, or use a moralistic tone. The training and curriculum manual explicitly instructed the facilitators not to disparage the efficacy of condoms or allow the view that condoms are ineffective to go uncorrected.

Safer Sex–Only Intervention

The 8-hour safer sex–only intervention encouraged condom use to reduce the risk of pregnancy and STIs, including HIV, if adolescents had sex. It was designed to (1) increase HIV/STI knowledge, (2) enhance behavioral beliefs that support condom use, and (3) increase skills to use condoms and negotiate condom use. It was not designed to influence abstinence.

Comprehensive Interventions

Two comprehensive interventions combined the abstinence and safer-sex, HIV risk–reduction interventions. One was 12 hours, and the other was 8 hours and contained similar content. Both targeted beliefs and skills to encourage abstinence and condom use. Both were designed to (1) increase HIV/STI knowledge, (2) strengthen behavioral beliefs supporting abstinence, (3) strengthen behavioral beliefs supporting condom use, (4) increase skills to negotiate abstinence, and (5) increase skills to use condoms and negotiate condom use.

The 12-hour version contained the safer-sex content (4 hours), the abstinence content (4 hours), and the general content common to both single-component interventions (4 hours). If the 12-hour version had a larger effect than the single-component interventions, it would not have been possible to distinguish the beneficial effects of greater intervention length from the benefits of combining the two components. To control for this, the 8-hour version was the same length as the single-component interventions.

Health-Promotion Control Intervention

The 8-hour health-promotion intervention, which served as the control, focused on behaviors associated with risk of heart disease, hypertension, stroke, diabetes, and certain cancers. It was designed to increase knowledge and motivation regarding healthful dietary practices, aerobic exercise, and breast and testicular self-examination, and to discourage cigarette smoking. It controls for Hawthorne effects to reduce the likelihood that effects of the HIV interventions could be attributed to nonspecific features including group interaction and special attention.³¹

Intervention-Maintenance Program

Participants were also randomly assigned to receive or not receive an intervention-maintenance program tailored to their intervention. It consisted of two 3-hour booster intervention sessions (6 weeks and 3 months after initial intervention sessions), 6 issues of a newsletter, and six 20-minute 1-on-1 counseling sessions during a 21-month period with their original facilitator.

Facilitators and Facilitator Training

The facilitators were 16 men and 51 women (mean age, 43.1 years); 61.2% had a master's degree; and 38.8% had a bachelor's degree. All were African American except for 1 Puerto Rican individual. We hired facilitators with the skills to implement any of the interventions, stratified them for sex and age, and randomly assigned them to receive 2.5 days of training to implement 1 of the 5 interventions. In this way, we randomized facilitators' characteristics across interventions, reducing the plausibility of attributing intervention effects to the facilitators' preexisting characteristics.

OUTCOMES

Participants completed preintervention, immediate postintervention, and 3-, 6-, 12-, 18-, and 24-month follow-up questionnaires. Follow-up data were collected between January 2002 and August 2004. All questions had been pilot tested to ensure that they were clear and that the phrasing was appropriate for the population. Preintervention and follow-up questionnaires assessed sexual behavior, demographic variables, and mediator variables. The postintervention questionnaire assessed mediator variables and evaluative ratings of the interventions. The primary outcome for the abstinence-only intervention was report of ever having sexual intercourse by the 24-month follow-up. Secondary outcomes were other self-reported sexual behaviors in the previous 3 months such as sexual intercourse, multiple partners (having sexual intercourse with 2 or more partners), unprotected intercourse (1 or more sexual intercourse acts without using a condom), and consistent condom use (condom use during every sexual intercourse act).

Data collectors received 8 hours of training and were blind to the participants' intervention condition. We took several steps to increase the validity of self-reported sexual behavior. To facilitate participants' recall, we asked them to report their behaviors during a brief period (ie, past 3 months),³² wrote the dates comprising the period on a chalkboard, and gave them calendars highlighting the period. To reduce the likelihood that participants would minimize or exaggerate, we stressed the importance of responding honestly, informing them that their responses would be used to create programs for other African American adolescents like

themselves and that we could do so only if they answered the questions honestly. We assured the participants that their responses would be kept confidential and that code numbers rather than names would be used on the questionnaires. Participants signed an agreement pledging to answer the questions honestly, a procedure that has been shown to yield more valid self-reports on sensitive issues.³³

SOCIAL DESIRABILITY RESPONSE MEASURE

The Marlowe-Crowne Social Desirability Scale³⁴ included in the preintervention questionnaire assessed the tendency of participants to describe themselves in favorable, socially desirable terms.

SAMPLE SIZE AND STATISTICAL ANALYSIS

With $\alpha = .05$, 2-tailed, and 37.4% of the control group initiating sexual intercourse by 24-month follow-up, a total sample size of 563 participants who completed the trial was projected to provide power of 80% to detect a difference of 16.8% in self-reported sexual intercourse between an HIV intervention condition and the control condition. We performed χ^2 and t tests to analyze attrition.

To test intervention effects, we used an intention-to-treat approach in which participants' data were analyzed regardless of the number of intervention or data collection sessions they attended. The efficacy of the HIV interventions on report of ever having sexual intercourse by the 24-month follow-up was tested using generalized linear regression with a log link, and the exponentiated coefficients, risk ratios (RR), and 95% confidence intervals (CI) are reported.³⁵ We used either of 2 error distributions (either Bernoulli or Poisson with robust variance estimator) depending on whether predicted probabilities violated the 0,1 range of probability. Effects of the HIV/STI interventions on recent sexual intercourse, multiple partners, unprotected intercourse, and consistent condom use during the 24-month follow-up period were tested using Poisson generalized estimating equations with a log link.³⁵ An unstructured working correlation matrix was specified in the generalized estimating equations analyses.

Analyses of recent sexual intercourse, multiple partners, and unprotected intercourse controlled for the baseline measures of the criterion, time, intervention-maintenance condition, sex, and age. Analyses of ever having sexual intercourse excluded participants who reported ever having sexual intercourse at baseline and controlled for intervention-maintenance condition, sex, and age. Analyses of consistent condom use excluded participants who did not report sexual intercourse in the past 3 months and controlled for time, intervention-maintenance condition,

sex, and age. The latter did not control for baseline measures because the small number of participants reporting recent sexual intercourse at both baseline and follow-up would have severely limited the sample size. The significance criterion was set at $\alpha = .05$ except for post hoc analyses comparing the abstinence-only and 8-hour comprehensive interventions in which a type 1 error-adjusted α of $.05/2 = .025$ was used.

RESULTS

SAMPLE CHARACTERISTICS

Table 1 summarizes select participant characteristics at baseline. About 53.5% of participants were girls and 46.5% were boys. Age ranged from 10 to 15 years, with a mean (SD) of 12.2 (0.81); 44.7% were in grade 6 and 55.3% were in grade 7. About 33.7% lived with both of their parents. About 23.4% reported having experienced coitus at least once, 12.0% reported having coitus in the previous 3 months; 6.4%, multiple partners in the previous 3 months, and 2.9%, unprotected intercourse in the previous 3 months. Of those who reported intercourse in the previous 3 months, 67.1% reported consistent condom use. Only 2 respondents (0.3%) reported sexual relations with someone of their own sex.

Characteristic	Participants, No./Total (%)					
	Total	12-h Comprehensive	8-h Comprehensive	Safer Sex Only	Abstinence Only	Health Control
Sample size	662	131	134	129	134	134
Female	354/662 (53.5)	69/131 (52.7)	72/134 (53.7)	70/129 (54.3)	70/134 (52.2)	73/134 (54.5)
Grade 7	366/662 (55.3)	68/131 (51.9)	71/134 (53.0)	73/129 (56.6)	77/134 (57.5)	77/134 (57.5)
Live with both parents	221/655 (33.7)	46/130 (35.4)	46/133 (34.6)	40/126 (31.8)	43/133 (32.3)	46/133 (34.6)
Ever had sexual intercourse	153/655 (23.4)	31/128 (24.2)	28/133 (21.0)	32/127 (25.2)	27/133 (20.3)	35/134 (26.1)
Sexual intercourse in past 3 mo	79/657 (12.0)	14/130 (10.8)	14/132 (10.6)	15/128 (11.7)	16/133 (12.0)	20/134 (14.9)
Multiple sexual partners in past 3 mo	42/655 (6.4)	11/130 (8.5)	10/132 (7.6)	6/127 (4.7)	4/133 (3.0)	11/133 (8.3)
Unprotected intercourse in past 3 mo	19/655 (2.9)	3/130 (2.3)	2/131 (1.5)	7/127 (5.5)	1/133 (0.8)	6/134 (4.5)
Consistent condom use in past 3 mo	51/76 (67.1)	10/14 (71.4)	10/14 (71.4)	4/14 (28.6)	13/14 (92.9)	14/20 (70.0)
Randomized to intervention maintenance	315/662 (47.6)	69/131 (52.7)	70/134 (52.2)	68/129 (52.7)	70/134 (52.2)	70/134 (52.2)
Age, mean (SD), y	12.0 (0.8)	11.9 (0.8)	11.9 (0.8)	12.0 (0.8)	12.0 (0.8)	12.0 (0.8)

Table 1. Sociodemographic Characteristics and Self-reported Sexual Behaviors at Baseline of Participating African American Students in Grades 6 and 7 by Intervention Condition

INTERVENTION ATTENDANCE AND FOLLOW-UP RETENTION

The Figure shows the flow of participants through the trial. Of the 762 eligible students, 662 (86.9%) participated. We do not have information regarding the characteristics of the eligible students who did not participate. Attendance at intervention and data-collection sessions was excellent. All participants attended intervention session 1, and 642 or 97.0% attended session 2. Attendance at session 2 ranged from 95.5% to 98.5%, with no significant difference among interventions. Only the 12-hour comprehensive intervention had a session 3, and all participants attended it. Of the trial participants, 649 (98.0%) attended at least 1 of the follow-ups: 633 (95.6%) attended the 3-month, 636 (96.1%) attended the 6-month, 598 (90.3%) attended the 12-month, 577 (87.2%) attended the 18-month, and 559 (84.4%) attended the 24-month follow-up. The interventions did not differ significantly in retention at follow-up.

Attending a follow-up session was unrelated to sex, age, living with both parents, or sexual behavior outcomes.

EFFECTS ON PRIMARY OUTCOME

Table 2 presents sexual behavior outcomes by intervention condition and time. Table 3 presents RRs and 95% CIs for intervention efficacy regarding sexual behavior outcomes. The abstinence-only intervention reduced sexual initiation ($P = .03$). The model-estimated probability of ever having sexual intercourse by the 24-month follow-up was 33.5% in the abstinence-only intervention and 48.5% in the health-promotion control group. The safer sex and comprehensive interventions did not differ from the control group in sexual initiation.

Intervention Condition	Participants, No./Total (%)					
	Baseline	3 mo	6 mo	12 mo	18 mo	24 mo
Ever had sexual intercourse ^a						
12-h Comprehensive	0/97 (0.0)	4/96 (4.2)	11/98 (11.2)	20/96 (20.8)	32/93 (34.4)	39/92 (42.4)
8-h Comprehensive	0/105 (0.0)	9/99 (9.1)	14/104 (13.5)	23/96 (24.0)	29/91 (31.9)	40/97 (41.2)
Safer sex only	0/95 (0.0)	15/93 (16.1)	22/92 (23.9)	32/88 (36.4)	39/87 (44.8)	44/85 (51.8)
Abstinence only	0/106 (0.0)	5/102 (4.9)	9/104 (8.7)	20/98 (20.4)	24/96 (25.0)	31/95 (32.6)
Health control	0/109 (0.0)	8/94 (8.5)	15/94 (16.0)	20/89 (22.5)	31/90 (34.4)	41/88 (46.6)
Had sexual intercourse in past 3 mo						
12-h Comprehensive	14/130 (10.8)	12/125 (9.6)	18/127 (14.2)	24/124 (19.4)	32/118 (27.1)	35/114 (30.7)
8-h Comprehensive	14/132 (10.6)	19/126 (15.1)	19/130 (14.6)	33/121 (27.3)	32/112 (28.6)	38/116 (32.8)
Safer sex only	15/128 (11.7)	22/124 (17.7)	21/122 (17.2)	34/115 (29.6)	40/113 (35.4)	42/105 (40.0)
Abstinence only	16/133 (12.0)	15/129 (11.6)	13/130 (10.0)	27/121 (22.3)	39/117 (33.3)	33/112 (29.5)
Health control	20/134 (14.9)	26/126 (20.6)	27/125 (21.6)	25/116 (21.6)	35/117 (29.9)	42/112 (37.5)
Had multiple sexual partners in past 3 mo						
12-h Comprehensive	11/130 (8.5)	7/126 (5.6)	7/127 (5.5)	13/124 (10.5)	10/118 (8.5)	16/114 (14.0)
8-h Comprehensive	10/132 (7.6)	6/126 (4.8)	6/129 (4.6)	9/121 (7.4)	16/112 (14.3)	13/116 (11.2)
Safer sex only	6/127 (4.7)	13/125 (10.4)	9/123 (7.3)	15/114 (13.2)	18/112 (16.1)	19/102 (18.6)
Abstinence only	4/133 (3.0)	5/129 (3.9)	5/130 (3.8)	12/122 (9.8)	21/115 (18.3)	15/112 (13.4)
Health control	11/133 (8.3)	14/126 (11.1)	19/125 (15.2)	11/115 (9.6)	18/117 (15.4)	18/112 (16.1)
Had unprotected sexual intercourse in past 3 mo						
12-h Comprehensive	3/130 (2.3)	5/126 (4.0)	2/126 (1.6)	7/124 (5.7)	6/118 (5.1)	8/113 (7.1)
8-h Comprehensive	2/131 (1.5)	2/126 (1.6)	1/130 (0.8)	6/121 (5.0)	10/111 (9.0)	8/115 (7.0)
Safer sex only	7/127 (5.5)	5/125 (4.0)	3/124 (2.4)	7/111 (6.3)	3/110 (2.7)	9/103 (8.7)
Abstinence only	1/133 (0.8)	1/128 (0.8)	1/129 (0.8)	7/122 (5.7)	8/117 (6.8)	8/112 (7.1)
Health control	6/134 (4.5)	4/126 (3.2)	11/125 (8.8)	7/116 (6.0)	7/117 (6.0)	8/110 (7.3)
Used condoms consistently during intercourse in past 3 mo ^b						
12-h Comprehensive	10/14 (71.4)	8/13 (61.5)	14/17 (82.4)	16/23 (69.6)	23/30 (76.7)	26/35 (74.3)
8-h Comprehensive	10/14 (71.4)	15/18 (83.3)	17/18 (94.4)	25/31 (80.6)	21/32 (65.6)	29/37 (78.4)
Safer sex only	4/14 (28.6)	16/21 (76.2)	17/20 (85.0)	24/34 (70.6)	34/40 (85.0)	31/42 (73.8)
Abstinence only	13/14 (92.9)	12/15 (80.0)	11/13 (84.6)	19/26 (73.1)	31/39 (79.5)	25/33 (75.8)
Health control	14/20 (70.0)	20/25 (80.0)	15/26 (57.7)	17/24 (70.8)	27/34 (79.4)	32/41 (78.0)

^aExcludes participants who reported sexual intercourse at baseline.

^bExcludes participants who did not have sexual intercourse in the past 3 months.

Table 2. Self-reported Sexual Risk Behavior by Intervention Condition and Follow-up Visit

Outcome ^b	Participants, No.	RR (95% CI) ^a			
		12-h Comprehensive	8-h Comprehensive	Safer Sex Only	Abstinence Only
Ever had sexual intercourse	457	0.87 (0.64-1.19)	0.86 (0.63-1.17)	0.95 (0.72-1.27)	0.67 (0.48-0.96)
Sexual intercourse in past 3 mo	657	0.95 (0.90-1.00)	0.98 (0.93-1.03)	1.00 (0.95-1.05)	0.94 (0.90-0.99)
Multiple sexual partners in past 3 mo	655	0.95 (0.91-0.99)	0.96 (0.92-1.00)	0.99 (0.95-1.04)	0.97 (0.93-1.01)
Unprotected sexual intercourse in past 3 mo	655	0.98 (0.95-1.02)	0.99 (0.95-1.02)	0.97 (0.94-1.01)	0.98 (0.95-1.01)
Consistent condom use in past 3 mo	292	0.98 (0.82-1.18)	1.08 (0.92-1.27)	1.09 (0.94-1.27)	1.03 (0.88-1.21)

Abbreviations: CI, confidence interval; RR, risk ratio.

^aThe effect size estimate is the RR (intervention coded as 1 vs health control coded as 0) for each human immunodeficiency virus/sexually transmitted infection intervention condition.

^bRisk ratios for ever having sexual intercourse were adjusted for intervention-maintenance condition, sex, and age at 24-month follow-up; for consistent condom use, time, intervention-maintenance condition, sex, and age over the entire follow-up period; all others, baseline measure of the criterion, time, intervention-maintenance condition, sex, and age over the entire follow-up period.

Table 3. Estimates of Intervention Effect Size for Self-reported Sexual Behavior Outcomes

EFFECTS ON OTHER SEXUAL BEHAVIORS

The abstinence intervention also significantly reduced recent sexual intercourse. The model-estimated probability of reporting intercourse in the past 3 months averaged over the 3-, 6-, 12-, 18-, and 24-month follow-ups was 20.6% in the abstinence-only intervention compared with 29.0% in the control group ($P = .02$). The model-estimated probability was 20.6% in the 12-hour comprehensive intervention, a marginally significant difference ($P = .06$) from the control group. The safer sex and 8-hour comprehensive interventions did not have significant effects on recent intercourse compared with the control group.

Abstinence-only intervention participants did not differ from the control group in reports of multiple partners ($P = .13$). Participants in the 8-hour ($P = .03$; model-estimated probability, 8.8%) and 12-hour comprehensive intervention groups ($P = .02$; model-estimated probability, 8.7%) were significantly less likely to report having multiple partners than were those in the control group (model-estimated probability, 14.1%). No other differences were statistically significant. None of the interventions had significant effects on consistent condom use or unprotected intercourse. In the subgroup of participants who had their sexual debut during the trial, there was no difference between the abstinence-only intervention and the control group regarding consistent condom use.

Post hoc analyses revealed no significant differences between the abstinence intervention and the 8-hour comprehensive intervention on any sexual behavior outcome.

SOCIAL DESIRABILITY BIAS

Marlowe-Crowne Social Desirability Scale scores were unrelated to self-reported sexual behavior, including abstinence, at baseline and did not interact with the intervention condition to influence sexual behavior during the follow-up period.

INTERVENTION MAINTENANCE

Tests of intervention maintenance x intervention condition interactions revealed no evidence that the intervention-maintenance program moderated the efficacy of the interventions in reducing sexual initiation, recent sexual intercourse, or unprotected sexual intercourse. However, the intervention maintenance x abstinence-only intervention ($P = .03$) and intervention maintenance x 12-hour comprehensive intervention ($P = .04$) interactions on multiple partners were statistically significant. The abstinence-only intervention was more efficacious in reducing multiple partners than was the control group for those who received intervention maintenance (RR, 0.93; 95% CI, 0.88-0.98; $P = .006$) compared with those who did not (RR, 1.02; 95% CI, 0.96-1.08; $P = .57$). The 12-hour

comprehensive intervention was more efficacious in reducing multiple partners than was the control group among those who received intervention maintenance (RR, 0.91; 95% CI, 0.86-0.96; $P = .004$) compared with those who did not (RR, 0.99; 95% CI, 0.93-1.06; $P = .83$).

No adverse events occurred during the study.

COMMENT

The results indicate that a theory-based abstinence-only intervention reduced self-reported sexual involvement among African American students in grades 6 and 7, a population at high risk of pregnancy and STIs, including HIV. The abstinence-only intervention compared with the health-promotion control intervention reduced by about 33% the percentage of students who ever reported having sexual intercourse by the time of the 24-month follow-up, controlling for grade, age, and intervention-maintenance condition. Although other studies have reported intervention-induced reductions in sexual intercourse among adolescents, this is the first randomized controlled trial to demonstrate that an abstinence-only intervention reduced the percentage of adolescents who reported any sexual intercourse for a long period following the intervention, in this case, 24 months after intervention.

We also found significant effects of the 8- and 12-hour comprehensive interventions on important HIV/STD risk-related behavior. Both comprehensive interventions significantly reduced the incidence of multiple sexual partners compared with the health control group. In addition, the 12-hour comprehensive intervention marginally significantly ($P = .06$) reduced the incidence of recent sexual intercourse compared with the health control group.

A common shortcoming of health-behavior interventions is that behavior change is often short-lived, disappearing on longer-term follow-up. We used a multifaceted, tailored intervention-maintenance program to address this shortcoming. Although many trials have used booster intervention sessions, this is one of few trials to test the efficacy of a randomly allocated strategy to extend interventions' efficacy. We found only modest effects of the intervention-maintenance program in enhancing efficacy. It enhanced the efficacy of the abstinence-only and comprehensive interventions in reducing multiple partners compared with the control group but did not enhance efficacy on sexual initiation, recent intercourse, or unprotected intercourse. Therefore, although the effects of our intervention maintenance component are promising, we encourage additional research to identify ways to extend the efficacy of HIV/STD risk reduction interventions.

A common concern about abstinence-only interventions is that they have

the unintended effect of reducing condom use, ie, that children exposed to such interventions are subsequently less likely to use condoms if they have sexual intercourse.^{20-21,36} However, a randomized controlled trial³⁷ and a literature review³⁸ found no effects of abstinence interventions on condom use. Similarly, in this trial the abstinence-only intervention participants did not differ in self-reported consistent condom use compared with the control group.

The results of this trial should not be taken to mean that all abstinence-only interventions are efficacious. This trial tested a theory-based abstinence-only intervention that would not meet federal criteria for abstinence programs and that is not vulnerable to many criticisms that have been leveled against interventions that meet federal criteria.^{19-20,36} It was not moralistic and did not criticize the use of condoms. Moreover, it had several characteristics associated with effective sexual risk-reduction interventions. It was theory-based and tailored to the target population based on qualitative data and included skill-building activities. It addressed the context of sexual activity and beliefs about the consequences of sexual involvement derived from the target population.

The limitations of this trial should also be considered. The data were based on self reports, which can be inaccurate because of the failure of memory or socially desirable responding. As noted in the Methods, we used several procedures to increase the validity of self reports. In addition, analyses were inconsistent with the view that social desirability response bias accounted for the results. The relatively small number of sexually active adolescents limited the statistical power to test the effects of the safer sex and comprehensive interventions on condom use. Therefore, effects of these interventions on condom use were likely underestimated in this trial. The generalizability of the results may be limited to African American students in grades 6 and 7 who are willing to take part in a health promotion project on weekends. Whether the results would be similar with older adolescents or those of other races or in other countries is unclear.

Despite these limitations, the results of this randomized controlled trial are promising. They suggest that theory-based abstinence-only interventions can have positive effects on adolescents' sexual involvement. This is important because abstinence is the only approach that is acceptable in some communities and settings in both the United States and other countries. This trial showed that having had a theory-based abstinence-only intervention would not necessarily reduce adolescents' condom use. Nevertheless, the results do not mean that abstinence-only intervention is the best approach or that other approaches should be abandoned.

Theory-based abstinence-only interventions might be effective with young adolescents but ineffective with older youth or people in committed relationships. For the latter, other approaches that emphasize limiting the number of sexual partners and using condoms, including the comprehensive interventions used in this trial, might be more effective. Tackling the problem of STIs among young people requires an array of approaches implemented in a variety of venues. What the present results suggest is that theory-based abstinence-only interventions can be part of this mix. Using theory-based abstinence-only interventions selectively might contribute to the overall goal of curbing the spread of STIs in both the United States and other countries.

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This article was brought to our attention by Dr Sr Hanna Klaus, author of the TeenSTAR abstinence-education program, used in schools throughout the US and other countries, which achieves even better results than those quoted by Jemmott et al.

WOOMB Vietnam Report at 15 Sept 09

Pre-marriage education in the BOM for 1000 couples

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Currently there are 10 teachers of the BOM active in Ho Chi Minh City (Saigon) diocese

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NAOMI-Billings Ireland

We have been teaching and promoting the Billings Ovulation Method throughout Ireland for over thirty years. We have offices in Dublin and in Cork. The Method is taught on an appointment basis at our offices and at various Centres where we have fully trained and accredited teachers. Where there is no locally convenient teacher we offer to assist clients through the post or by telephone or e-mail.

Some of our teachers travel to see clients when called upon. At our monthly Pre-Marriage Courses couples hear a talk on the Method which they would not receive at any other course. Our Pre-Marriage Courses were set up for the sole purpose of teaching couples the Billings Ovulation Method.

In 2009 most couples came to learn the Method in order to achieve pregnancy. Our Annual National Seminar in April took the theme 'ARE YOU TRYING FOR A BABY?' and the response and attendance were wonderful, resulting throughout the year in several pregnancies.

Our series of OPEN DAYS for the public, covering the same theme, once again attracted couples wishing to achieve, several of whom are now pregnant. A lot of advertising goes into these events and is a great opportunity to publicise the Billings Ovulation Method.

While most of our teachers have been teaching for over thirty years we are delighted that we also have a core of new teachers in training. We look forward to another year of taking the Billings Ovulation Method to women and couples in Ireland in 2010.

Billings Ovulation Method™ in Tanzania

Sr Ursula Birgitta Schnell OSB, MD, has sent a report of the teaching and teacher training which has been undertaken throughout 2009 in Tanzania. We congratulate her and her team of teachers on their magnificent work.

At St Benedict's Hospital in Ndanda, BOM staff have conducted 24 seminars, meetings and training courses for 1,384 participants on the Billings Ovulation Method™, Education for Life, STI and AIDS. During all activities chastity before marriage is stressed and faithfulness in marriage.

In 2009, 195 people were trained as teachers of the Billings Ovulation Method™, bringing the total number of trained teachers in Tanzania to 2,707.

At the BOM Office at St Benedict's Hospital, 396 women came to achieve pregnancy, attending a total of 784 individual counselling sessions and 460 women came to 516 individual counselling sessions for help with spacing births. A further 95 couples received pre-marriage instruction in the Billings Ovulation Method™. Total attendances numbered 1,395, of whom 312 attended as a couple. Reported pregnancies achieved - 26, with one couple succeeding in choosing to have a boy.

The total number of people who have learnt the Billings Ovulation Method™ at St Benedict's Hospital now numbers 3,237. Of those, some have transferred to other BOM teaching centres for the convenience of being able to attend closer to their homes.

The infertility clinic has seen 396 women of whom just under half had previously used some form of contraception: 0.51% used the loop, 17.42% the Pill, 20.45% Depo Provera, 1.77% condom use. The duration of use of oral hormonal contraceptive was between 3 months and 17 years. The number of Depo Provera injections per woman averaged between 1 and 21, with one woman having had 68 injections.

From July to December 2009 staff removed Implanon from 55 women, most of whom were suffering from irregular bleeding and/or headaches and blurred vision.

Throughout the rest of Tanzania 758 couples have attended BOM clinics for help with achieving pregnancy, and 1,736 for child spacing. 19,679 attended courses and seminars on the Billings Ovulation Method™.

OMR&RCA

The Ovulation Method Research & Reference Centre of Australia aims to provide and develop counselling and education in all aspects of the Billings Ovulation Method, especially through:

1. teaching the Method for achieving or avoiding the conception of a child by natural means;

2. encouraging persons not to resort to contraception, induced abortion or direct sterilisation of the man or the woman, or any reproductive technology which bypasses the natural act of intercourse; none of which form part of the Billings Ovulation Method;

3. developing deeper respect and better understanding between men and women in marriage, particularly in the area of sexual relationships and fertility;

The *Bulletin of the Ovulation Method Research & Reference Centre of Australia* is produced three times annually. It is a medium for the publication of medical and scientific articles about natural fertility and related topics. It also publishes theological and philosophical articles pertaining to sexual morality and marriage which are in accord with traditional morality and with the teachings of the Magisterium of the Catholic Church.

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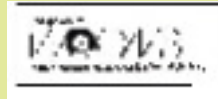
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4. educating and encouraging parents to meet their responsibilities to each other and to their children;

5. promoting the development of stable family life;

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