

Menstrual Taboos Among Major Religions

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Citation

M Guterman, P Mehta, M Gibbs. *Menstrual Taboos Among Major Religions*. The Internet Journal of World Health and Societal Politics. 2007 Volume 5 Number 2.

Abstract

A look at major religions of the world shows that, without exception, they have placed restrictions on menstruating women. Judaism, Christianity, Islam, Hinduism, and Buddhism have all made statements about menstruation and its negative effect on women, leading to prohibitions about physical intimacy, cooking, attending places of worship, and sometimes requiring women to live separately from men at this time. This article explores these taboos, gives first-hand accounts of these religions' attitudes toward menstruating women, and suggests a course of research that could lead to change.

INTRODUCTION

The average woman will menstruate almost a quarter of her fertile life. Yet there are many religions which, to this day, hold primitive ideas and beliefs regarding this common phenomenon. In this paper we will provide an overview of the views of menstruating women held by five of the world's major religions.

It should be emphasized that the formal regulations presented in this paper do not necessarily reflect the actual practices and adherences of these religions. For example, studies have found that, in Modern-Orthodox Judaism, many of the regulations are being broken on a regular basis (Guterman, 2006).

TRIBAL RELIGIONS

It is no wonder that primitive religions incorporated taboos around the menstrual process. Without proper understanding of the underlying biological basis, menstruation can look quite threatening. It seems to be a recurrent bleeding, every twenty-eight days, without any apparent wound or injury. Because the cycle mirrors that of the moon, the process appears supernatural. Further confusing is the fact that menstruation occurs exclusively in females, disappears during pregnancy, and stops at middle age (Montgomery, 1974).

Menstrual huts and other taboos were common among primitive cultures in the past. The following are examples of primitive practices still in place today. The Huauilu of Indonesia, for instance, have a menstrual hut on the edge of village. While Huauilu women must live in these huts during

menstruation, they are not confined to them – they can wander through the forest, if they stay away from hunting trails. However, they must refrain from eating game, and they must bathe at special fountains forbidden to men. These rituals are performed to spare the men from harm (Hoskins, 2002).

The Dogon (a group of people living in the central plateau region of Mali, south of the Niger bend near the city of Bandiagara in the Mopti region) believe that women must stay in a special hut during the course of their menstrual period. During menstruation, Dogon women get no relief from their usual agricultural labor and spend most of their days working in the fields. However, village streets and family compounds are off-limits. Furthermore, sexual intercourse and cooking for a husband are strictly forbidden (Strassmann, 1996).

In the cultures of the Highlands of Papua New Guinea (i.e., the Hagen, Duna, and Pangia areas), menstrual huts were once the norm. However, these groups have now abolished the practice of using these huts, along with other ritual practices (Stewart & Strathern, 2002).

The Enga, Kaulong, and Sengseng cultures of New Guinea believe that sexual intercourse with a menstruating woman will drain and weaken a man (Montgomery, 1974).

JUDAISM

The Jewish code of law, Halakha, details strict rules governing every aspect of the daily lives of Jews, including their sexual lives. Jewish law expressly forbids literally any

physical contact between males and females during the days of menstruation and for a week thereafter (Eider, 1999; Keshet-Orr, 2003). This includes passing objects between each other, sharing a bed (most couples have two separate beds, which can be pulled apart during Niddah), sitting together on the same cushion of a couch, eating directly from the wife's leftovers, smelling her perfume, gazing upon her clothing (whether or not it has been worn), or listening to her sing (Steinberg, 1997). According to stipulated ritual, an Orthodox Jewish wife is responsible for immersing in the Mikvah, the ritual bath, following these 2 weeks. This entire period of time, from the beginning of the “bleeding days”, until the end of the 7 “clean days”, when the woman immerses herself in the ritual bath, is called the “Niddah (ritually unclean) period” (Guterman, 2006).

The reason behind these “Laws of Family Purity” is that menstrual blood (defined as the uterine lining) is considered ritually unclean. The source for this law is Leviticus 18:19, which reads, “You shall not approach a woman in her time of unclean separation, to uncover her nakedness.” Chapter 18 of Leviticus discusses all of the different types of forbidden relationships, such as bestiality and incest. All of the verses explicitly state that one may not have intercourse with the forbidden. The fact that the nineteenth verse mentions “approach”, as opposed to actually having intercourse, is the reasoning behind these menstrual laws (Eider, 1999).

Although the laws of family purity are only required with one's own wife, any form of physical contact with pleasurable intent (including holding hands, hugging, and kissing) is prohibited with any menstrual woman who has not yet immersed in the Mikvah (Eider, 1999). Since brides will immerse in the Mikvah for the first time before their weddings, all unmarried women are presumed to be in a state of Niddah (Eider, 1999). Therefore, every woman who has had her first period is not allowed to be touched, according to Jewish law. Additional restrictions are put on the married woman while she is a Niddah. These taboos include playing games and sports together (e.g., ping-pong, tennis), directly handing or receiving objects (they must be placed down onto a surface, and then may be picked up by the spouse), and eating together from the same plate (Eider, 1999).

Physical danger and disgust were used as mechanisms to keep compliance to these laws among the Jews in the Middle Ages (Steinberg, 1997). When a woman was menstruating, she was seen as a physical and spiritual danger to all men.

Nahmanides states that her breath is harmful, and her gaze is detrimental. A woman was instructed not to walk between two men, because, if she did so at the end of her period, she would cause strife between them, and if she passed between them at the beginning of her period, she would cause one of them to die. This shows that the “danger” of the menstrual woman is not simply the blood, but even the atmosphere around her. Additionally, a woman is instructed to be careful when cutting her toenails during her menses, for fear that her toenail clippings would spread infection to anyone who stepped on them (Steinberg, 1997).

Contemporary sources, on the other hand, view menstruation and the laws surrounding it as a blessing. Modern-Orthodoxy stresses “attention, affection, and companionship” between couples (Steinberg, 1997). It is thought that following these laws will cause the husband to view his wife as an equal human being, as opposed to a sexual object (Steinberg, 1997).

Growing up in a U.S. Orthodox Jewish community is a unique experience. “I (the first author) attended separate, same-sex schools, and had little contact with members of the opposite sex. For as long as I can remember, I was taught that girls above the age of twelve (i.e., girls who have had their first menstrual period) were not allowed to be touched by boys. Only once engaged was I taught the strict rules that govern the sexual lives of observant Jews.

Jewish observance includes observance of the laws of family purity, as detailed above. It was certainly an eye-opening experience to learn about these rules (such as restrictions on passing objects between each other, eating directly from one's wife's leftovers, smelling her perfume, etc.). Only at the end of the Niddah period, after the ritual bath, are spouses permitted to touch each other, once again. Learning about these regulations has led to my interest and desire to conduct research in this area.”

CHRISTIANITY

Most Christian denominations do not follow any specific rituals or regulations related to menstruation. However, Western civilization, predominantly Christian, has a history of menstrual taboos. In early Western cultures, the menstruating woman was believed to be dangerous, and social restrictions were placed upon her. In fact, the British Medical Journal, in 1878, claimed that a menstruating woman would cause bacon to putrefy (Whelan, 1975).

The history of the menstrual taboo has been a major reason

in the decision to keep women from positions of authority in Christianity (Phipps, 1980; Ruether, 1990). Additionally, there are some Christian denominations, including many authorities of the Orthodox Church, who will not allow women to receive communion during their menstrual period (Barnes, n.d.; Phipps, 1980). Menstruation taboos are also responsible for the belief of many Catholics that a woman should not have intercourse during her monthly period (Phipps, 1980). Catholic canon law refuses to allow women or girls to be in any semi-sacerdotal roles, such as altar server (Ruether, 1990).

Russian Orthodox Christians believe in menstrual taboos as well. Menstruating women must live secluded in a little hut during this time. They do not attend church services, cannot have any contact with men, and may not touch raw or fresh food. Menstruating women are also thought to offend and repel fish and game. The air surrounding menstruating women is believed to be especially polluting to young hunters; if a hunter gets close enough to a woman to touch, then all animals will be able to see him and he won't be able to hunt them. A menstruating woman's gaze is even thought to affect the weather negatively (Morrow, 2002).

While Western Christian denominations are less extreme, some relic of negative attitudes toward menstruating women remain. The third author of this article describes her experience with menstruation as follows. "I grew up in a U.S. Christian family that was not religious, attending no services until in my adolescence the family discovered Unitarianism. In spite of the lack of religious feeling, my mother called menstruation 'the curse,' as did most of my friends and their mothers. There was no sense of menstruation as a natural function, and my mother had to resort to handing me a pamphlet to instruct me about the process. While there were no taboo activities specifically related to being 'cursed' or 'unclean,' menstruating high school students were often treated as though they were ill; they were not expected to take gym classes, and their absence from school was accepted during 'those days.'"

ISLAM

In Muslim cultures, "impure" (i.e., menstruating) women are to be avoided by men (Whelan, 1975). These laws are derived from the Qur'an (2:222), which reads, "They question thee (O Muhammad) concerning menstruation. Say it is an illness so let women alone at such times and go not into them til they are cleansed. And when they have purified themselves, then go unto them as Allah hath enjoined upon

you."

Islam does not consider a menstruating woman to possess any kind of "contagious uncleanness" (Azeem, 1995). The Islamic law treats menstruation as impure for religious functions only (Engineer, 1987).

There are two main prohibitions placed upon the menstruating woman. First, she may not enter any shrine or mosque (Engineer, 1987; Fischer, 1978). In fact, she may not pray or fast during Ramadan while she is menstruating (Engineer, 1987). She may not touch the Qur'anic codex or even recite its contents (Fischer, 1978; Maghen, 1999; Whelan, 1975). Secondly, she is not allowed to have sexual intercourse for seven full days (beginning when the bleeding starts). She is "exempted" from rituals such as daily prayers and fasting, although she is not given the option of performing these rituals, even if she wants to (Azeem, 1995).

In addition, the woman must complete a "ritual washing" before she becomes "clean" again (Fischer, 1978; Whelan, 1975). Following this washing she is able to perform prayers, fasting, and allowed to enter the mosque.

Following a lengthy discussion of the Islamic laws of purity, Maghen (1999) concludes that "the 'problem' with menstruating women (reflected in the restrictions placed upon certain of their activities) is confined to the ritually threatening properties of their menstrual blood per se" (p. 381).

A colleague of ours described her experience as follows: "When I was little, and lived in Iran, we had traveled to a village north of Tehran. My parents invited the villagers to eat with us. However, their teenage daughter was not allowed to have dinner with us. My parents and I were surprised; we later found out that because she had her period, she was viewed as 'unclean' and 'najeste' (in Farsi, this refers to an object or person who will contaminate you). It was believed that she would contaminate the dishes, silverware, food, etc.

Overall, even though my mother tried to educate me, in the right way, about the menstruation process, I still recall feeling 'dirty' and 'damaged' when I had my first period. I remember that the religious preachings made me feel very ashamed about both my body, and this normal experience, as I went through the process." (Ghamramanlou, 2006, personal communication).

HINDUISM

Hinduism views the menstruating woman as “impure” (Chawla, 1992), or “polluted” (Apffel-Marglin, 1994). In fact, menstruation is referred to in some places as a “curse” (Sharma, Vaid, & Manhas, 2006). The impurity lasts only during the menses, and ends immediately thereafter. During their menstruation, women must leave the main house, and live in a small hut outside the village (Apffel-Marglin, 1994; Phipps, 1980). They must rest, and do no work; they cannot comb their hair or bathe (Apffel-Marglin, 1994). They are not allowed to partake in the Naulas, or traditional water springs. In other words, menstruating women do not have access to water when they need it for personal hygiene. They are not allowed to cook food (Joshi & Fawcett, 2001), and must keep separate utensils (Sharma, et. al., 2006). Women may not enter the pooja room (the prayer room within each home) and may not enter the temple (Chawla, 1992; Ferro-Luzzi, 1980; Phipps, 1980; Sharma, et. al., 2006). Women may not mount a horse, ox, or elephant, nor may they drive a vehicle (Whelan, 1975). Ferro-Luzzi (1980) also found various food restrictions during menstruation, including fish and meat. In particular, menstruation is to be a private event. There is a strong taboo against menstruation being made known in a public sphere (Apffel-Marglin, 1994).

The second author, a member of the Hindu faith from India, tells about her experience with menstruation. “When I was in the seventh grade, I remember my mother getting upset when I told her about the onset of my first menstrual cycle. My mother said that I had grown up fast and feared that I would not grow any taller. My mother also instructed me about rules for menstruating girls, that they are not supposed to enter a temple, participate in a religious ceremony and or get married while having their periods. Trips to religious places are scheduled so that no woman of fertile age is menstruating during that time.”

BUDDHISM

In Buddhism, menstruation is generally viewed as “a natural physical excretion that women have to go through on a monthly basis, nothing more or less” (Buddha Dharma Education Association, 2004). However, Hindu belief and practice has carried over into some categories of Buddhist culture.

In Taiwan, Buddhists characterized menstruating women as polluted, and restricted them with taboos. Women were taught that their menstrual periods were a dangerous vulnerability (Furth & Shu-Yueh, 1992). Menstrual blood,

itself, was viewed as “dirt” or “poison” (Furth & Shu-Yueh, 1992). Japanese Buddhism, in particular, has been characterized by a persistent anti-feministic attitude (Jnanavira, 2006).

Buddhist scriptures state that all human bodies, male and female alike, are flawed and are leaking filthy substances. While authentic Buddhist sutras do not explicitly say the female body is polluted, many still discriminate against women because of their menstruation. Some common taboos include women being banned from participating in folk rituals, and that they must avoid temples (Furth & Shu-Yueh, 1992). Menstruating women cannot meditate (though some women do, as they feel particularly “connected”), nor can they have contact with priests (Furth & Shu-Yueh, 1992). They cannot take part in ceremonies, such as weddings, either (Furth & Shu-Yueh, 1992).

During menstruation, women are thought to lose Qi. (Qi, also commonly spelled chi, is believed to be part of everything that exists, as in “life force”, or “spiritual energy”.) There is also a Buddhist belief that ghosts eat blood; a menstruating woman, then, is thought to attract ghosts, and is therefore a threat to herself and others (Lhamo, 2003).

Women supposedly stop menstruating when they enter the first level of arhatship (“stream-enterer”). (An arhat is “one who is worthy”, the perfected person who attains nirvana through his or her own efforts.) It is believed that they prove their ability to control their bodies and eradicate the greatest barrier to enlightenment (Lhamo, 2003).

Furth & Shu-Yueh (1992) conducted interviews of Taiwanese Buddhists during which general questions about the nature of menstruation was addressed. Respondents differed in their comments, ranging from “a normal physiological phenomenon” to “you have to let it flow out or you will get sick.” However, almost all the interviewees agreed that the blood is “unclean”, and most added that it is “shameful,” some even went as far as to call it “dirty.”

SIMILARITIES AMONG RELIGIONS

The similarities among the major religions regarding their beliefs about menstruation are striking. Even though Christianity and Islam were influenced by Judaism, Buddhism was influenced by Hinduism, and primitive religions influenced more contemporary ones, it is nonetheless surprising to see that similar taboos exist across religions and cultures. Some of the more consistent themes

include isolation, exclusion from religious services, and restraint from sexual intercourse.

The concept of 'menstrual huts' can be observed across most tribal religions. Many of the so-called 'modern' religions still prohibit menstruating women from entering temples for prayer. Menstruating women may already feel isolated from other people due to their "impure" status. During this time of isolation, many would want to turn to their religion. Without being able to enter temples (or even to pray privately, in some religions), women may feel even more isolated.

A second consistent theme across religions is the idea of impurity. Every major religion views the menstruating woman as impure, despite the fact that there is nothing inherently impure about the process. Some religions view the impurity as strictly spiritual; others fear physical danger and harm as well.

A third major theme that is found, consistently, across religions and cultures is the notion that during the menstrual period, there must be restraint from sexual intercourse. It would be interesting to research the reasons for abstaining from sexual intercourse during the actual menstruation: is it due to religion or is it due to fear of menstrual blood? Future studies will address this question.

Finally, it is interesting to note that a number of religions also believe that a woman who ends her menstruation must immerse herself in a ritual bath before resuming her status as "pure".

DIFFERENCES BETWEEN RELIGIONS

One of the differences between the major religions is the level of severity of the menstrual taboos. Buddhism and Christianity offer the most lenient view of the menstruating woman, while Orthodox Judaism has the strictest view.

Furthermore, the views of the menstruating women are specific to the orientation of the culture from which the religion arises. An obvious illustration of this point is that only within hunting societies will one find restrictions regarding game.

GENERAL DISCUSSION

It is important to understand the different restrictions and views of menstruating women in different religions. One reason for this importance is the fact that there are many people who still follow these laws. For example, Hindus, Muslims, and Orthodox Jews still abide by these taboos. An understanding of these beliefs will help in dealing with

people of these faiths.

Additionally, these ideas have an impact on people who don't practice religion. As recently as 25 years ago, it was reported that many peasants in Eastern and Central Europe believe that a menstruating woman shouldn't bake bread, churn butter, or spin thread (Whelan, 1975). In modern Western culture, women still feel that they must hide their menstrual cycles. This is clearly evident from the marketing of products that allow them to do so; they promise women a sanitized, deodorized, and fresh bodily presentation (Roberts, 2004). The origins of these stigmas are in the different religions described above. By learning the origins, we can more effectively combat their continuance.

Feelings about menstruation represent biases against women. The extent of some of the taboos explored in this paper indicate a lack of understanding; many have no real relation to menstruation. Understanding the religious origin of biases against menstruation can help feminists as they struggle against cultural prejudices.

Of course, the relationship between religion and biases against women is bi-directional. Religions incorporated existing biases against women as they developed their taboos surrounding menstruation. Gloria Steinem (1986) has written amusingly and convincingly that if men could menstruate and women could not, "menstruation would become an enviable, worthy, masculine event." However religions developed their menstrual taboos, the fact that they have endorsed them has served to accentuate and perpetuate biases against women.

In light of the modern feminist outcry, some religions have tried to adopt a less biased view. One strong illustration of this is in Modern-Orthodox Judaism. The laws, which used to be called "Hilchot Niddah", (a term stating that the menstruating woman is the ostracized object of ritual concern), have been renamed "Taharat HaMishpachah (family purity)." Promises of eternally renewing honeymoons are made instead of threats of physical harm. A tradition of repugnance and evasion has been changed to one of desirability and strong connections. It seems almost as if Modern-Orthodoxy is making an apology for laws which are supposed to be observed unquestionably.

Research is beginning to focus on this area. The extent to which religious rules about menstruation are still followed is unclear. Guterman (2006) researched the observance of the laws of family purity among Modern-Orthodox Jews and

found that many of the laws were not being followed. However, it was common for respondents to avoid intercourse during the two weeks after menstruation began. Research into the actual observance of other religious groups would help us understand how serious the impact of taboos is. Furthermore, we need to understand the relationship between strength of religious beliefs and menstrual taboos. The authors are in the process of exploring how extensive negative attitudes toward menstruation are among a diverse college population, and what the association is between religious feeling and negative attitudes. Additionally, research should look at location (urban versus rural) differences, as well as educational differences affecting how these laws are followed. Only through true understanding can we properly modify our approaches and remove obsolete superstitions from everyday life.

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References

- r-0. Apffel-Marglin, F. (1994). *The Sacred Groves*. Manushi, 82, 22-32.
- r-1. Azeem, S. A. (1995). Women in Islam versus Women in the Judaeo-Christian Tradition: The Myth & The Reality. *Islam - The Modern Religion*. Retrieved on November 7, 2006 from http://www.themodernreligion.com/women/w_comparison_full.htm
- r-2. Barnes, P. (n.d.). Menstruation, Emissions, and Holy Communion. Orthodox Christian Information Center. Retrieved November 7, 2006, from <http://www.orthodoxinfo.com/praxis/menses.aspx>
- r-3. Buddha Dharma Education Association. (2004). 21: It is commonly believed that women are unclean. How true is this belief? *Women in Buddhism: Questions & Answers*. BuddhaNet. Retrieved on November 7, 2006 from <http://www.buddhanet.net/e-learning/history/wbq21.htm>
- r-4. Chawla, J. (1992). The Rig Vedic Slaying of Vrtra: Menstruation Taboos in Mythology. *Manushi*, 68, 29-34.
- r-5. Eider, S. D. (1999). *Sefer Hilkhos Niddah = Halachos of Niddah*. Jerusalem; New York: Feldheim Publishers.
- r-6. Engineer, A. A. (1987). *Status of Women in Islam*. Delhi: Ajanta Publications.
- r-7. Ferro-Luzzi, G. E. (1980). Food Avoidances at Puberty and Menstruation in Tamilnad: An Anthropological Study. In J. R. K. Robson (ed.), *Food, Ecology and Culture: Readings in the Anthropology of Dietary Practices* (pp. 93-100). New York: Gordon and Breach Science Publishers.
- r-8. Fischer, M. M. (1978). Persian Women. In Lois Beck & Nikki Keddie (Eds.), *Women in the Muslim World* (pp. 204-206). Cambridge: Harvard University Press.
- r-9. Furth, C., & Shu-Yueh, C. (1992). Chinese Medicine and the Anthropology of Menstruation in Contemporary Taiwan. *Medical Anthropology Quarterly*, 6(1), 27-48.
- r-10. Guterman, M. A. (2006). Identity conflict in Modern Orthodox Judaism and the laws of family purity. *Method & Theory in the Study of Religion*, 18(1), 92-100.
- r-11. Hoskins, J. (2002). The menstrual hut and the witch's lair in two eastern Indonesian societies. *Ethnology*, 41(4), 317-333.
- r-12. Jnanavira, D. (2006). "A Mirror for Women? Reflections of the Feminine in Japanese Buddhism". *Western Buddhist Review*, 4. Retrieved on November 7, 2006 from http://www.westernbuddhistreview.com/vol4/mirror_for_women.html
- r-13. Joshi, D. & Fawcett, B. N. (2001, August). Water, Hindu Mythology and an Unequal Social Order in India. Paper presented at the Second Conference of the International Water History Association, Bergen, Norway.
- r-14. Keshet-Orr, J. (2003). Jewish women and sexuality. *Sexual and Relationship Therapy*, 18(2), 215-224.
- r-15. Lhamo, Y. C. (2003). The fangs of reproduction: an analysis of Taiwanese menstrual pollution in the context of Buddhist philosophy and practice. *History & Anthropology*, 14(2), 157-178.
- r-16. Maghen, Z. (1999). Close Encounters: Some Preliminary Observations on the Transmission of Impurity in Early Sunni Jurisprudence. *Islamic Law & Society*, 6(3), 348-392.
- r-17. Montgomery, R. E. (1974). A Cross-Cultural Study of Menstruation, Menstrual Taboos, and Related Social Variables. *Ethos*, 2(2), 137-170.
- r-18. Morrow, P. (2002). A woman's vapor: Yupik bodily powers in southwest Alaska. *Ethnology*, 41(4), 335-348.
- r-19. Phipps, W. E. (1980). The Menstrual Taboo in the Judeo-Christian Tradition. *Journal of Religion and Health*, 19(4), 298-303.
- r-20. Roberts, T. (2004). Female Trouble: The Menstrual Self-Evaluation Scale and Women's Self-Objectification. *Psychology of Women Quarterly*, 28(1), 22-26.
- r-21. Ruether, R. R. (1990). Women's Body and Blood: The Sacred and the Impure. In Alison Joseph (Ed.), *Through the Devil's Gateway: Women, Religion and Taboo* (pp. 7-21). London: SPCK.
- r-22. Sharma, N., Vaid, S., & Manhas, A. (2006). Age at Menarche in Two Caste Groups (Brahmins and Rajputs) From Rural Areas of Jammu. *Anthropologist*, 8(1), 55-57.
- r-23. Steinberg, J. (1997). From a "pot of filth" to a "hedge of roses" (and back): Changing theorizations of menstruation in Judaism. *Journal of Feminist Studies in Religion*, 13(2), 5-26.
- r-24. Steinem, G. (1986). *Outrageous acts and everyday rebellions*. New York: New American Library.
- r-25. Stewart, P. J., & Strathern, A. (2002). Power and Placement in Blood Practices. *Ethnology*, 41(4), 349-363.
- r-26. Strassmann, B.I. (1996) Menstrual hut visits by Dogon women: a hormonal test distinguishes deceit from honest signaling. *Behavioral Ecology*, 7(3), 304-315.
- r-27. Whelan, E. M. (1975). Attitudes toward Menstruation. *Studies in Family Planning*, 6(4), 106-108.

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