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Dr. Ignác Semmelweis's 19th-Century Cure for Deadly Childbed Fever Ignored in Vienna's Maternity Wards: His Sympathy for Women Victims and Their Newborns Costs Professional Standing

For some 19th-century women ready to give birth, even a public street was preferable to a bed in an accredited hospital delivery ward where statistics suggested a massacre of women and newborns throughout Europe and the United States.

Puerperal septicemia, commonly called childbed fever, was the culprit, and nobody in the world's medical or scientific community at the time knew how to control its epidemic proportions.

Nobody, that is, except Ignác Fèuléop Semmelweis (1818-1865), a Hungarian-born law student drawn to medical studies at the world-renowned University of Vienna's School of Medicine and its equally famous teaching hospital, the *Allgemeines Krankenhaus* [General Hospital]. The hospital, which opened in 1784, had by the mid-19th century the largest ward in the world for birthing women. In 1840 the hospital's general maternity ward was divided between the First Ward for physicians and medical students and the Second Ward for the training of midwives.

In 1847, Semmelweis, working as an assistant obstetrician in the maternity ward, noted the much higher number of deaths from *puerperal septicemia* in the First Ward compared to the Second and made his first attempts to arrest the disease. Tragically, his simple but effective preventative measure—washing hands—went unheeded, and when he died in 1865 little had changed in the field of obstetrics to stop childbed fever.

After Semmelweis's death, the stubborn resistance to his discovery was subjected to various analyses, including contentions that his work was not sufficiently scientific, that he was a lonely hero fighting a losing battle against ignorance, that he was a victim of therapeutic nihilism, and that his difficult personality made him his own worst enemy. All describe to some degree aspects of Semmelweis's struggles, but no researcher as yet has pointed out a major reason for the rejection of his solution: that he was a victim himself of prevailing 19th-century misogyny and child abuse. The deaths of women and children, especially poor women, did not weigh heavily on society's conscience at the time, and overt concern for such patients only encouraged established physicians to question a younger colleague's professional standing.

As part of a unit of study in my 2014 CSB/SJU COLG 385 Study Abroad Seminar in Salzburg, Austria, I took my students to the Semmelweis Museum of Medical History in Budapest, Hungary, named after him in 1965. Our English-speaking guide there corroborated the sentiment that Semmelweis's ground-breaking discovery was not taken seriously because it was considered insufficiently scientific, i.e., based primarily on statistics alone. Those statistics revealed, nevertheless, that the death rate from childbed fever in the First Ward of the General Hospital, where prenatal mothers were examined by students directly after performing autopsies without washing their hands, was more than three times higher than in the Second Ward, where midwives, who did not dissect cadavers, assisted in the births. Semmelweis's solution was the implementation of basic hygiene.

While physicians and hospital administrators ignored or overruled Semmelweis's studied conclusion, the general Viennese population was well aware of—and most concerned about—the greater possibility of dying in the First Ward than in the Second Ward. Upon entering the hospital, women begged to be placed with *accoucheurs* [midwives] in the Second Ward; failing that, they preferred *Gassengeburtten*, giving birth on the street, where the chances of the mother's survival were greater than in the First Ward.

Statistics alone were enough to convince Semmelweis that physicians and students who entered the First Ward after dissecting in the mortuary must wash their hands in a mild antiseptic solution. When consistently done, he argued, this measure reduced the death rate to almost zero. His was an astounding revelation at a time before the discovery of bacteria, but evidently too early to be universally accepted.

In our COLG 385 course reading text, *The Doctors' Plague: Germs, Childbed Fever, and the Strange Story of Ignác Semmelweis*, the surgeon and bioethicist Sherwin B. Nuland describes how the transmission of infected matter on the hands of doctors and their students into the vaginas of pre- and postpartum women amounted to murder, costing the lives of thousands in Europe. Nuland, who died in 2014, taught for thirty years at the Yale School of Medicine. In his book, he uses the word “carnage” to describe the high percentage of iatrogenic deaths of postpartum women and their newborns in maternity wards all across the continent (36, 87, 121). Indeed, the statistics raise the specter of a continental tragedy of staggering proportions.

Nuland, however, does not ascribe to the view that Semmelweis was a lone genius persecuted by society for revealing the backwardness of medical doctors, their resistance to change, and their insistence on clinging to outdated theories. This lonely hero theory was proposed by Morton Thompson in his 1949 bestselling historical novel, *The Cry and the Covenant*, which brought long overdue attention to the forgotten obstetrician. Instead, Nuland places the blame squarely on Semmelweis himself and on his lack of scientific methodology for the resistance to his theory. He blames first Semmelweis's difficult personality, which changed gradually from cheerful and friendly to depressive and subject to explosions of rage, and concludes by ascribing the changes in his personality to the possibility of early-onset Alzheimer's disease.

Moreover, Nuland argues that Semmelweis did not follow up with appropriate laboratory experiments and failed to use the newly developed microscope in his work. Germ theory was not yet developed

and the bacteria causing childbed fever, *Streptococcus pyogenes*, was not identified until the latter half of the 19th century (xxx). Furthermore, says Nuland, Semmelweis failed to publish the results of his findings in a clear, methodical, and documented manner in medical journals, so no persuasive narrative of his findings existed. This lack in turn allowed the interpretation to persist that his theory referred only to cadaver infection, when, in fact, Semmelweis had included infection from all putrid wounds.

Other theories on Semmelweis's failure proposed in secondary literature locate the resistance to his discovery in the general socio-political atmosphere at the time, which painted the obstetrician as an overtly patriotic Hungarian in the Austro-Hungarian Empire and a foreigner in the imperial capital of Vienna.

Additional opposition at the time, overlooked or only touched upon tangentially, was the lack of any social value at all placed on the lives of women and children, especially those in the lower classes. It was nearly impossible then for physicians and hospital administrators to even consider that such progressive reform movements as the founding of hospitals and the subsequent establishment of maternity wards in those hospitals, instigated by well-educated and well-meaning male administrators and physicians and intended to improve society, could instead fatally endanger the lives of a certain segment of the population.

The Socio-political Atmosphere in mid 19th-century Austro-Hungary

Since the first *documented* epidemic of childbed fever in a maternity ward was reported in 1746 at a European hospital, the Hôtel-Dieu in Paris, speculations regarding its cause began to circulate throughout the continent. Semmelweis had to first discredit all such speculations, some resurrected from ancient Arab or Greek medical writings, mystical religious tracts, or later pseudo-scientific musings. The thirty-five or more causes proposed can be placed into two major categories: those internal and those external to women's bodies. Before we look at external theories, let us consider a few

that located the cause of childbed fever within the woman herself, within her physical body or her mental state. This doesn't surprise us considering the historical tendency to blame victims of structural violence for their own difficulties.

One general theory, for example, suggested that women simply had susceptible constitutions making them more prone to disease; another blamed female misconduct in early pregnancy, such as wearing tight stays and laced petticoats, combined with the growing weight of the uterus, causing the retention of fecal matter in the colon and its absorption into the blood (Nuland 43, 135). General theories for disease from the seventeenth-century were exhumed, suggesting that sensitivity to cold or experiencing extreme emotions congealed the blood or diverted it from the uterus. Also resurrected were ancient theories like humoral imbalance or the suppressed lochia theory first described by Hippocrates. Even walking too soon after delivery was suggested as a possible cause of the deadly fever, which at times was killing 80-90% of the women who delivered in European hospitals versus 35% who delivered at home (40).

The most unusual internal theory was that of milk-metastasis, which seemingly arose because of the whitish color of the pus of puerperal fever. According to this notion, menstrual fluid, interrupted by pregnancy, was believed to somehow be transformed into breast milk and any blockage of its flow from the uterus to the nipple caused childbed fever. An odd historical footnote is that such a connecting duct is found in a drawing by the renowned sixteenth-century artist, Leonardo da Vinci, said by some to have been the best anatomist in the world during his time and whose work is otherwise known for its precision and detail (Nuland, *Da Vinci*, 157).

Suggestions of external causes of childbed fever, i.e., causes located outside women's bodies, included miasmas (impure air) of all kinds in or near the hospitals, poor ventilation in the wards, cosmic influences, chance, or providence, i.e., punishment by God. Dr. Johann Klein, the director of the maternity ward at Vienna's General Hospital in Semmelweis's time and the physician responsible for its day-to-day operation, insisted on just such a vague cause, stating that an uncanny, unspecified sort of epidemic, genius

epidemicus, hovered over the First Ward “against which they [physicians] were not only powerless but blameless as well” (qtd. in Nuland, *Doctors’ Plague*, 86).

Meanwhile, physicians and their students throughout Europe continued making their rounds from the dissecting table to the beds of their prenatal patients, unwilling to contemplate the possibility that they themselves were transmitting the disease from their dirty hands to their patients as they went from bed to bed checking on the progress of the women in labor. The Scottish physician Alexander Gordon (1752-1799), trained in Edinburgh, one of the top medical schools at the time, had already suggested, to no avail, that puerperal fever was contagious and recommended fumigation, burning linens and clothing, washing, and bleeding. The backlash he encountered from the medical hierarchy forced him to leave obstetrics, making him perhaps the first victim of the resistance to a scientific explanation for the cause of childbed fever on the part of prestigious and respected physicians, delaying the acceptance of his findings, and later, of Semmelweis’s as well (Nuland 48). The suggestion that doctors and medical students themselves were the cause of the dreaded disease was simply unthinkable.

Vienna’s General Hospital was established during a period that saw the passage of several imperial measures intended to improve the lives of the Austro-Hungarian population, especially its poorer citizens. Although enlightened public statements were widely uttered supporting reform during the period, now called *Josephinism* after Emperor Joseph II, powerful officials in the dual monarchy were really more interested in maintaining their authority than in any genuinely progressive innovations, according to historian Steven Beller, who specializes in Austrian history.

Granted, there is a natural resistance to new ideas and to change in any culture or era, but prior to 1848 the gap between political appointees—even in the medical field—and those outside the circle of power was especially great. Even in the face of a medical catastrophe like puerperal fever, Vienna General Hospital maternity ward director Klein insisted on opposing Semmelweis. Klein not only closed his ears to Semmelweis’s

proposals and remained blind to his own responsibility as ward director, but he actively undermined his subordinate's attempts to implement the simple hygienic measure of washing hands before entering the First Ward. Klein's single policy change, meant somehow to console Semmelweis, was to halve the number of *foreign* students practicing in the hospital maternity wards.

Given Klein's opposition, Semmelweis attempted to advance his own authority in the Vienna General Hospital by corresponding directly with obstetricians inside and outside the empire; he even sought employment elsewhere, but was repeatedly thwarted. In letters to professors of obstetrics in Vienna and Würzburg, Germany, Semmelweis's tone is apologetic when he insisted that, in order to stop the murder of women and children, he decided he had to confront false theories on the cause of puerperal fever wherever and whenever he encountered them; he expressed the hope that anyone with his/her heart in the right place would understand why he must resort to such means (*Briefe*).

Although the scientific community was quite international at the time, the social hierarchy, ethnic discrimination, and nationalistic tendencies overrode any berth for rational consideration. To its credit, the University of Zurich in Switzerland offered Semmelweis a position as professor of obstetrics, which, sadly, he turned down, perhaps because of his impending marriage in Vienna.

Prejudice Against Outsiders

In addition to prejudice against women and children at the time, Semmelweis was most likely fighting invisible cultural barriers in Vienna because of his Hungarian birth, his German dialect, his middle-class background, and his suspected Jewish heritage. He was born in Hungary, but his parents were of German descent, and his first language was a dialect of German spoken in Budapest called Buda-Swabian. Nuland suggests that Semmelweis never learned to write either German or Hungarian fluently, and for that reason hesitated to publish a book or journal articles expounding his work on childbed fever.

During his study and work in Vienna, Semmelweis presented himself as a Hungarian patriot and after 1848 openly wore the Hungarian national colors. Such overt attachment—and possibly because of his suspected Jewish heritage—may have blocked any professional advancement at the University of Vienna or in the General Hospital.

Although Semmelweis was not Jewish, his name suggested a Jewish background, which was sufficient to trigger prejudice against him in the strongly anti-Semitic Austro-Hungarian Empire. In 1927, in a tongue-in-cheek visitor's guide to Vienna and Budapest, *Was nicht im Baedeker steht: Wien und Budapest* [*What's not in Baedeker: Vienna and Budapest*], Ludwig Hirschfeld describes the peculiarities of the two capitals. A prominent example in Vienna, he notes, was the first question often asked upon meeting a stranger: „*Ist er ein Jud?*” [Is he a Jew?]. Only after receiving an answer, writes Hirschfeld, do people decide what to think about their new acquaintance. The author goes on to warn the prospective visitor not to be too “interesting or original, otherwise you will suddenly, behind your back, become a Jew” (Hirschfeld, qtd. in Beller, 212). And Semmelweis was indeed an original thinker.

Sigmund Freud, who was Jewish, encountered such discrimination. Although considered Austria's greatest thinker and, as the founder of psychoanalysis, one of the intellectuals who radically changed Western culture and thought, Freud had difficulty obtaining a teaching post or full professional advancement at the University of Vienna. He was eventually forced into exile by the Nazis.

Further marginalizing Semmelweis, rumors circulated that he was performing abortions in order to supplement his reduced income (Thompson 314). Such aspersions came repeatedly, causing him further economic deprivation and eventually forcing him and his family to abandon Vienna altogether in 1850. He returned to Budapest, where he was readily appointed as a professor in the university's School of Medicine and director of its gynecology clinic, positions which he filled successfully until shortly before his death in 1865.

Concern for Women Reduces Professional Status

While Semmelweis's personality, background, and social status are all important aspects of his life, the palimpsestic tableaux of his story is the prevailing environment of nineteenth-century social misogyny. The lives of women and children at that time, especially those of lower social standing, had essentially no value, and violent abuse by men against them was widely accepted. Indeed, just expressing active concern for victims of social violence reduced one's own social standing. Semmelweis's slide downhill accelerated when he chose to specialize in obstetrics and then attempted to save the lives of women and children. While Nuland overlooks the broader gender issue here, he notes that obstetrics was the stepchild of medicine at the time. Few of the early hospitals, private or state, cared for obstetrical patients, reflecting "the general lack of physician [i.e., male] interest in the field" (38). New studies on childbirth, however, and the "instrumentation" in the field (e.g., the development of obstetrical forceps) made obstetrics "sufficiently challenging for their attention" and resulted at least in the training of obstetricians "or man-midwives, as some of them were at first called" (38-39). The establishment of lying-in hospitals or lying-in wards within hospitals also "raised the status of obstetricians," writes Nuland, adding that "it must be admitted that it was a long time before obstetrics as an academic field attained the level long held by internal medicine, and more recently, surgery" (39). Such a general lack of respect for obstetrics meant that those medical students who couldn't find posts elsewhere entered the field. By extension, men who entered obstetrics were themselves regarded as less masculine than those who entered the more prestigious fields of surgery or internal medicine.

While Vienna remained a Mecca of Medicine attracting some of the earliest medical tourists, the emphasis in medical circles was on diagnosis, not therapy. According to historian William M. Johnston, the adherents of "therapeutic nihilism" found Semmelweis's concern for his patients "unbecoming to a professional" (226). Adherents of this theory made no distinctions among their patients nor any recognition of their individual characteristics. "The task of doctors," writes Johnston, "was not to eradicate it [death] but merely to understand it" (228).

Such emphasis on understanding, not curing, disease, combined with the cultural tendency to blame the victim, led physicians to suspect that the cause of puerperal fever lay wholly in the nature of women's biology. As noted above, women contracting childbed fever were thought to have an inborn epidemic constitution, to wear clothing that was too restrictive in early pregnancy, to fear death or male doctors, to eat poorly, to contract chills, or to walk too soon after delivery. The more fantastic theories of suppressed lochia or milk-metastasis described above insist that something in a woman's body must have gone terribly awry, resulting in her death. The fact that intelligent, scientific-minded male physicians refused to consider the possibility that they themselves were potentially the murderers of thousands of women and children under their care underscores the privileged status of the male mind over the female body in nineteenth-century European and U.S. cultures.

Writing in 2003, Nuland blames Semmelweis for being insufficiently scientific and for lacking the ability to persuade others to support his theory, both typically masculine characteristics. When Semmelweis's book finally appeared in 1861, *Die Aetiologie, der Begriff und die Prophylaxis des Kindbettfiebers* [*The Etiology, Concept and Prophylaxis of Childbed Fever*], it was considered too disorganized and confusing to be persuasive. Semmelweis's failure to conduct follow-up laboratory experiments and to present early on a cogent summary of his findings were compounded by his difficult personality, according to Nuland. While he does not use the word, Nuland's description of Semmelweis's emotional state toward the end of his life sounds as if he were hysterical, a word generally reserved for women. Sadly, after leaving Vienna and working in Budapest with success for fifteen years, the forty-seven-year-old obstetrician was committed to an insane asylum near Vienna. He died a mere two weeks later from a disputed cause and was buried in a nearby cemetery.

Despite several publications over the decades, including Irvine Loudon's 1995 investigation into the history of childbed fever, Semmelweis's important contribution to the medical field has been forgotten in the West. He was not recognized fully in Hungary until the 1960s when researchers began to recover the country's lost history, a process that was accelerated

after the fall of the Iron Curtain in 1989. His bones were disinterred for the third time in 1964 and placed in the small entryway to the city's Museum of the History of Medicine. Nearby stands a Miklós Borsos sculpture entitled "Motherhood." In 1965, the medical school in Budapest was named after him, as was the museum dedicated to the History of Medicine, founded in 1909, assuring him name recognition in Hungary. Not until 2003, however, was a booklet titled *Semmelweis* written by university professor and specialist in medical history Károly Kapronczay available for purchase at the museum.

In Vienna, a small, easily overlooked plaque recognizes Semmelweis's innovative work in the General Hospital. In psychology circles, however, a category of analysis still exists, albeit in limited circulation, "for a certain type of human behavior characterized by reflex-like rejection of new knowledge because it contradicts entrenched norms, beliefs or paradigms" (*Wikipedia*). It is called the Semmelweis Reflex.

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