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Stethoscopes and Diapers: The Dual Role of Mother and Medical Student

by

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Abstract

It is evident that during the last century, there has been a striking demographic shift in the medical field. Whereas medicine was historically a profession reserved for men, the trend has been for increasingly greater female enrolment, to the point we are at today, with greater than 50% of medical trainees of the female gender. In addition to an increase in female enrolment, the average age of medical students has increased. Further addition to the compositional change of medical students, is the shifting attitudes of male and female students alike. Whereas, traditionally medical students reported "lifestyle and personal factors as being of least importance in making a career choice", there is a new genre of students who wish to seek a balanced lifestyle, combining medical responsibilities with protected time for family and the pursuit of interests outside of medicine. This demographic shift has resulted in a greater proportion of female medical students, who are entering medical school in their prime child bearing years and therefore needing to balance motherhood and medicine. Despite social advances in the medical field over the last century, there still exist many challenges in such a balancing act.

The challenges one faces as a mother in medical training are of relatively recent concern and have received little attention in terms of policy and advocacy. These challenges generally fall under two broad categories: individual factors and institutional factors. For example, mothers during their training are faced with professional challenges in terms of both educational progression and career selection, the challenges of caring for children while juggling professional commitments, facing the stigma attached to pregnancy and motherhood in medicine, and having to deal with the lack of administrative policies with regards to unique needs as a mother in medicine.

With an awareness of women's unique challenges with regards to motherhood in medicine in mind, in addition to the awareness of the systemic challenges the Canadian medical system is currently faced with, the profession is at a critical point in terms of addressing these extremely poignant issues. This paper will attempt to offer plausible strategies for Canadian medical schools and the health care system alike to consider. It is our hope that the connection between the support of women in medicine and the future success of the Canadian health care system will be illustrated, and in turn these points will be appropriately addressed by policy makers and the administrative powers at large.

Changing Demographics

Since the last century there has been an important demographic change in the medical field. Initially, medical school entry in Canada was reserved for men. It was clear that the medical establishment believed that women who wanted to study medicine were a "poor investment" of scarce resources, as they were more likely than their male counterparts to abandon the medical profession in favour of raising a family (Potee, Gerber and Ickovics, 1999). For example, Queen's University was one of the first Canadian medical schools to allow women to study medicine, admitting three undergraduate female medical students in 1880 (Cataudella, 1999). The male students were so outraged at having to study amongst female students that a group of them threatened to transfer to the University of Toronto, where lectures would not be "watered down" by the presence of women. As a result, by 1891 enrolment had faltered, Queen's had succumbed to financial difficulties and as a response, the medical school transferred the women to other schools.

Despite negative attitudes towards women in medicine, women continued to apply to medical schools in great numbers. By the early 20th century, approximately half of medical schools in North America and Britain were beginning to educate women physicians, although the schools that did accept female students were stringently, if unofficially adhering to quotas. This usually allowed women to comprise not more than 6% of a class (Potee, Gerber and Ickovics, 1999). The most progressive school at the time in terms of female enrolment appeared to be the University of Toronto, which admitted more female students than any other medical school in North America (Cataudella, 1999).

On May 7th, 1943, Queen's University became the last Canadian medical school to limit itself to only male medical students. The statement "Men only admitted" was deleted from the medical school calendar and it was recognized that women had become important in the medical profession (Cataudella, 1999). Queen's University noted that 95% of female graduates of the University of Toronto and University of Western Ontario were still practicing ten years later, a proportion that was at least as high as for male graduates. In addition, it was acknowledged that in the postwar world, many services would be socialized, and a need for more physicians was anticipated, thus women were likely to play a more important role in medicine.

The magnitude of change in the number of female medical students from the mid-19th century to the early 21st-century is remarkable. The University of Birminghamin Great Britain, reported that of 419 medical school graduates in the period 1959-1963, 22.9% were women (Whitfield, 1969). The proportion of women graduating from Canadian medical schools has increased dramatically, from 7% in 1960 to 12% in 1970 and 32% in 1980 (Ferrier and Woodward, 1982). It appears that the three decades from 1970 to 1999 have seen the most radical demographic shift. The proportion of women in U.S. medical schools rose from less than 10% before 1972 to 42% in 2000. Women now represent approximately 61% of UK medical graduates, 59% of US medical graduates and 60% of Canadian medical graduates (Rosenbaum, 2006). At the Northern Ontario School of Medicine, the entering class of 2005 was comprised of 67% female students while the entering class of 2006, our class, is 57% female. (NOSM Community Report 2007). According to a recent article in *Maclean's* magazine, "52% of doctors under age 35 are now women and the majority of students at nearly all of Canada's medical

schools are female. By 2015, women will make up 40 percent of the total physician workforce" (Gulli and Lunau, 2008).

Profile of Current Medical Students and Shifting Priorities

In addition to an increase in female students, the average age of medical students has also increased. According to a study done on female graduates of Yale University School of Medicine, the age of matriculation for female graduates has changed considerably over time. In 1950-1959, 95.7% of graduating female medical students was under the age of 24 while 4.3% were 24 or older. In contrast, from 1990-1999, 65.4% of female graduates were less than 24 years of age, and 34.6% were over 24 years (Potee, Gerber and Ickovics, 1999). The presence of younger graduates is reflective of the traditional path to medical school, often including a science-oriented undergraduate degree followed immediately by entry to medicine. More recently, the focus of medical school admissions has been to consider students who have a variety of experiences and backgrounds, including previous professional or graduate degrees, work, or international experience. This has led to an increase in the average age of the incoming medical student.

As the average age of medical students has become higher, the likelihood of student-parents has increased, as well as pressures on older incoming medical students to start a family. According to analysis done by Potee, Gerber and Ickovics (1999), for female physicians who have children, the average age at which they had their first child was 31.1 years. Thus the age of incoming medical students places them in their prime child-bearing years. The challenge of balancing family responsibilities with medical education is therefore becoming an increasing concern of students, particularly women, who often bear the majority of the burden in terms of child-rearing.

As well as looking at the factors facing medical students, it is also important to consider the career progression of female physicians in terms of the optimal time to have children. There are unique challenges for child-rearing in each stage of medical training and practice. In medical school, there are financial as well as social pressures to maintain attendance. Additionally, some schools require students to complete placements in communities outside of their home campus, as well as electives in clerkship which can disrupt families and add additional challenges. Many medical schools lack specific policies for maternity leaves, causing increased difficulty for students wishing to start families in medical school.

The challenges change somewhat in residency training, particularly due to a protected paid maternity leave for residents. However, there is also stigma associated with taking maternity leave or requiring modified responsibilities to deal with medical complications of pregnancy or adjustment to motherhood. Finally, for practicing physicians, they must deal with having responsibility to a patient population which may be without care if the physician takes a maternity leave or reduced duties. There is also pressure from colleagues to maintain a demanding schedule as well as financial pressure, particularly for fee-for-service physicians, discouraging a lengthy maternity leave or a more manageable schedule. Despite the fact that challenges exist across the career spectrum, for many medical students, this is a time of "least responsibility and most flexibility", and thus the proportion of student-mothers has increased over the years

(Gafni, 1991). This has lead to a new generation of medical students who seek to balance family with medicine.

Although the consideration of family is more prevalent today, historically this has not always been the case. In the 1980's, medical students "reported lifestyle and personal factors as being of least importance in making a career choice" (Sanfey *et al.,* 2008). Medicine has always been a demanding career, and the image of the rural family physician devoting himself to his patients continues to be seen by some as an ideal in medicine**.** Furthermore, medical trainees feel pressure to always be available for learning opportunities, placing other responsibilities secondary to medicine. These ideals leave little room for achieving balance, and students or physicians attempting to live up to these expectations are finding they are exhausted and suffering from family and relationship break-downs. According to a 2003 CMA survey, "Nearly half of all physicians are in advanced stages of burnout" (Gulli and Lunau, 2008).

This realization has lead to a generation of students and physicians who seek a balanced lifestyle, combining medical responsibilities with protected time for family, friends, exercise, and the pursuit of interests outside of medicine. As a result, "more medical students are choosing controllable lifestyles specialties" (Mayer, 2007) and physicians are coming up with new ways of practicing medicine to allow for a healthy home life. Medical students and physicians are focusing on family and child-rearing as well as medicine, and they are no longer willing to delay or ignore family responsibilities including child-bearing, based on pressure from an overwhelmed medical system.

Therefore, since the composition of medical school classes is becoming more female and of child-bearing age, students are seeking to balance medicine with a focus on family, it is reasonable that the issue of motherhood in medical school is becoming increasingly prevalent. Despite this, there still exist many challenges and roadblocks for student-mothers which are cause for concern. In seeking to achieve balance in family and career, these women are facing the challenges of the dual roles of mother and medical student.

Challenges of Motherhood in Medical School

Although there exist many challenges to motherhood in all realms of medical training and practice, the issue of motherhood in medical school is a relatively recent concern which has received little attention in terms of both policy and advocacy. In focusing on this subset of mothers in medicine, many unique challenges can be identified as roadblocks to truly achieving balance in both roles. These challenges fall under the categories of individual and institutional factors. Individual factors which cause difficulty in achieving balance include family and professional challenges, while institutional factors can be subdivided into administrative policies and the presence of stigma.

In terms of family, many mothers in medicine face challenges in caring for their children while juggling professional commitments. The concept of working mother guilt is associated with not having enough time to spend with children, missing milestones and feeling secondary to child-care providers in relationship to one's child. These feelings of guilt are endorsed in the literature by members of the medical profession. In a 1982 study, nearly half of male medical students and physicians agreed with the statement that "women physicians who spend long hours at work are neglecting their

responsibilities to home and family" (Martin *et al.,* 1987). In July of 2007, a third year medical student and mother of two decided to leave medicine, and expressed her reasoning in a Vancouver Sun article. Despite a love for medicine, she explains that "the guilt you feel as a mother when you're gone for entire days at a time, [...] it's not worth the most prestigious job on earth. [...] I'm tired of being a compromised mother and a compromised medical student" (Adam, 2007). This challenge causes great stress for mothers in medicine and this role strain can have disastrous impacts on one or both roles.

Although challenges at home with spouse and children have immense impact, these mothers also face professional challenges in terms of both educational progression and career selection. Women faced with pregnancy in medical school have important decisions to make regarding taking time off. Whether necessitated by medical complications of pregnancy, the physical toll of childbirth or the emotional adjustment of life as a new mother, there are consequences to disrupting one's education. These consequences include lost learning opportunities, falling behind one's classmates and difficulty in competing for competitive residency positions with a lapse in training. A maternity leave, although important to adjustment as a mother, "is viewed as a lag or gap in training" according to many residency programs (Little, 1990), which can be a professional challenge for medical students entering motherhood.

In addition to the impact that motherhood can have on educational progression, it also can be limiting in terms of career selection. Historically, women have been more likely than men to select lifestyle-friendly specialties. In a study of American women physicians in 1985, 68% worked in primary care compared to 44% of male physicians. In 1967, only 1.5% of surgeons were female, a number which only rose to 2.5% in 1985 (Martin, 1987). In facing the dual demanding roles of mother and medical student, many women are prioritizing family responsibilities and choosing primary care fields which have more flexibility in hours and practice formats. In a 1984 study on medical specialty choices at the Medical College of Wisconsin, 41.7% of women ranked family life as the most important determinant of specialty choice versus 21.7% of men (Bergquist, 1985). Even as practicing physicians, the challenge of motherhood leads to limits on professional growth. According to a study of full-time academic physicians, mothers report "slower career progress and less career satisfaction" than males or females without children (Brian, 2001). Thus, motherhood and a focus on family provide a challenge in terms of professional choices and career progression.

Despite the many personal and professional challenges faced by mothers in medical training, there also exist challenges based on institutional factors at medical schools, including administrative policies and the presence of stigma. Administrative policies or a lack thereof, in terms of maternity leave, financial ramifications and child-care policies can add to the challenges faced by student-mothers. Although residency programs in Canada offer twenty weeks of protected and paid maternity leave, this does not extend to medical schools. At many schools, maternity leave is either granted on an individual basis or falls under the category of general medical leave.

The gap in terms of official policies regarding maternity leave is not reflective of the historical change in the composition of most medical school classes. Those students who are granted a leave do not receive any financial assistance, while still being responsible for interest on bank and government loans. Additionally, the burden of child-care upon returning to school must be incorporated into a student budget, and in many

places child-care is not easily accessible. Without administrative policies acknowledging and assisting student mothers, these women face additional challenges in coping with adjustment to motherhood and a return to their studies.

In addition to a lack of administrative policy support faced by students, there continues to be a stigma attached to pregnancy and motherhood in medical training. This stigma is encountered in interactions with colleagues and preceptors and is a common thread historically for women in medicine. The idea of keeping women out of medical school because of the anticipated "wastage" that would occur when they had children is demonstrative of the obstacles faced by women, particularly mothers who wished to enter the medical field (Whitfield, 1969). This perception continued to be prevalent in the medical field into the 1980's, with 30% of responding physicians agreeing that there is "a significant risk to the optimal functioning of a department that hires a female of child-bearing age" (Martin, 1987).

The stigma associated with motherhood in medical school extends even further due to the potential for maternity leave to impact the schedules and workload of fellow students particularly in clerkship, and later on in residency. Despite the necessity of maternity leave for many student-mothers, the student who takes this leave "may still be the butt of criticism from unsympathetic colleagues and often from her program director" (Little, 1990). A lack of support from peers and instructors can be detrimental to a student already struggling with role strain, particularly at the initial stages of adjustment to motherhood.

With an increase in female medical students in their child-bearing years and some insight into the challenges that these women face, it is clear that the issue of mothers in training must be examined. The medical system has evolved historically towards equality for women in medicine, yet with this equality come a host of other challenges including that of motherhood in medicine. As these student mothers are struggling to seek balance, and advocacy is taking place for both resident and physician mothers, the need for institutional support for student mothers must also be addressed.

Implications for the Future

It is clear that with the influx of women into the medical profession, in addition to an awareness of women's unique challenges with regards to motherhood, the profession is at a crucial stage in needing to examine its traditional ethic of professional responsibility to the exclusion of all else. Structural reforms within medicine are needed to ensure adequate flexibility for women facing the dual role of medical trainee and mother.

With women's unique considerations in mind, it is also prudent to consider the systemic trends and challenges in the medical field when designing structural reform. As clearly articulated throughout this paper, women are comprising an increasingly greater proportion of the total physician workforce. Peter Coyte, a professor of health economics at the University of Toronto, predicts this influx of women will contribute to a crisis in health care. Further, Dr. Brian Day, president of the Canadian Medical Association comments that "it's been proven repeatedly, female doctors will not work the same hours or have the same lifespan of contributions to the medical system as males" (*Maclean's*, 2008). Dr. Day's personal opinion is that families are at least partly to blame. In addition to an increasingly female workforce, which many feel will have a

profound impact on the gap between supply and demand, Canada's doctor-patient ratio is currently worst among any industrialized nation: with just 2.2 physicians per thousand people, it ranks 24th out of 28 countries of the Organization for Economic Co-operation and Development (OECD). And among the G8 countries, Canada ranks dead last when it comes to physician supply (*Maclean's,* 2008).

With the doctor shortage and medical crisis Canada is currently faced with in mind, there has never been a more critical point in history to carefully examine policies in place for mothers in medicine. By ensuring that these women, who are trending towards child-rearing during medical training, are well supported and advocated for, we will be enabling a group of women and physicians capable of managing the complex and unique roles of parenting and practicing medicine. These competing pressures have traditionally been pushing many female doctors to the breaking point, and women have reported higher rates of burnout than males. It is our argument that with careful consideration of women's unique needs during medical training and motherhood, women will perhaps work fewer hours per week in the short term, during the key child-rearing years, yet their life-time productivity as a physician be enhanced. One illustration of this point is Dr. Fran Berard, a family physician in the village of Notre Dame de Lourdes, Manitoba. Dr. Berard asked for more time off to be with her three children, and the community accommodated her as they viewed this time as an investment, a sacrifice of care in the short-term so that she wouldn't quit medicine altogether. After working part-time for years, Dr. Berard recently resumed her 60-hour workweek. She commented "it came full circle. Now I can give back to the community what they gave to me" (*Maclean's,* 2008).

In order to support female students during their medical training, there are several strategies that Canadian medical schools need to examine and weave into policy. As mentioned, this process is crucial in ensuring the health and well-being of not only the female physicians themselves, but also the Canadian health care system. Some medical schools, particularly in the United States, have begun to implement institutional supports that perhaps Canadian medical schools can examine and adopt. For example, since 1995 the Yale School of Medicine has had a "parent track" or "flex track" that involves paying for four years of medical school and taking as many as eight years to complete the MD degree. Another example is the University of Washington Medical School, who has made available space to serve as "crying rooms" – soundproofed and glassed-in rooms in the back of lecture halls where students can see and listen to lectures while caring for their small children (Potee, Gerber and Ickovics, 1999).

The Canadian Society of Obstetricians and Gynaecologists (2000) developed a Committee Opinion on pregnancy and parental leave in residency programs offering principles that should be endorsed to support residents. These concepts also could apply to the unique needs of medical students in a parenting role. The Committee recommends that formal programs and policies be developed to meet the changing needs of residents, partners, and families experiencing a pregnancy during residency. As mentioned earlier, many Canadian medical schools do not have formal "maternity leave" policies and rather deal with individual cases on an "ad hoc" basis. By formalizing these policies, it is more feasible to consider the unique needs of medical students in a parenting role, and students are well aware of the supports in place prior to becoming pregnant, rather than being in a state of fear or anxiety when having to share their news with administration with unknown consequences.

Further, the Committee recommends that flexible rotation schedules and on-call options be organized. The unique needs of the pregnant medical student need to be considered when devising clerkship rotations, for example. In addition, medical schools who demand that students complete rotations away from their home campus for extended periods of time need to carefully consider the impact this may have on a pregnant or mothering student, and in turn, develop suitable alternative strategies to enable these individuals to participate in a modified manner. It is also suggested that educational strategies be provided that incorporate innovative technologies to meet the needs of parenting and pregnant individuals. In an era of medical education, where the trend is off-site learning and distance education via technological aids, this should not be a difficult component to integrate for Canadian medical schools and may provide a viable option for many student mothers.

Another integral component that needs to be addressed and closely evaluated is that of child care. On-site child care (in conjunction with the hospital, medical school, or other local businesses if necessary) should be available to medical students and residents alike (Potee, Gerber and Ickovics, 1999). Such child care facilities, with flexible hours and sliding payment scales dependent on income, would benefit many members of the hospital and academic community. Much more latitude for childcare exists after completing medical training as attending physicians have the benefits of a sizable income, greater support systems, and the power of a contract with may include a pregnancy clause. Therefore, many options for this population of women are available including hiring help in the home, or working from home. Many female physicians, particularly those in specialties such as psychiatry have set up home offices (Brian, 2001). These are unfortunately not options for medical students who are under great financial strain as a result of exorbitant tuition fees, and facing average debt loads in excess of $ 150,000. Therefore, accessible and affordable child care is of paramount importance in addressing the unique challenges of mothers in medical training.

Finally, as many women are having children during their residency training, where policies for pregnancy are much more protected, it is still critical to consider the challenges that this population faces. Currently, the structure of some medical residencies is so inflexible that the absence of a single resident causes hardship throughout the program. Residency programs need to build in some “shock absorption” (Potee, Gerber and Ickovics, 1999). It is necessary for program directors to have the appropriate budget to hire community or staff physicians to help cover night call when residents are not available. In addition, increased flexibility can be garnered by allowing a resident to train at less than full-time and perhaps by spreading a single year of training over two years.

It can be appreciated that many of the recommendations brought forth in order to support the unique challenges of medical trainees during motherhood may prolong the duration of medical training for these individuals. With awareness of the doctor crisis that Canada currently faces, these recommendations need to go hand in hand with a broader strategy to ensure both issues are addressed simultaneously. The Canadian Medical Association estimates it would take 26,000 more doctors, right now, to bring Canada up to the OECD average. Medical schools aren’t graduating enough students to keep up with the demand, and Dr. Brian Day estimates that approximately 1500 Canadians are studying medicine in other countries (*MacLean’s*, 2008). Therefore, despite an increase in medical school enrolment since 2000, the issue of increasing medical school positions needs to be urgently addressed in order to meet demand. In

addition, of the 1500 Canadian students studying medicine abroad, it is crucial to consider accrediting foreign medical schools, which would enable our Canadian graduates' ease of transition back into Canada to practice medicine upon graduation.

Conclusion

In conclusion, it is evident that during the last century, there has been a striking demographic shift in the medical field. Whereas medicine was historically a profession reserved for men, the trend has been for increasingly greater female enrolment, to the point we are at today, with greater than fifty percent of medical trainees of the female gender. In addition to an increase in female enrolment, the average age of medical students has increased. Further addition to the compositional change of medical students, is the shifting attitudes of male and female students alike. Whereas, traditionally medical students reported "lifestyle and personal factors as being of least importance in making a career choice", there is a new genre of students who wish to seek a balanced lifestyle, combining medical responsibilities with protected time for family and the pursuit of interests outside of medicine. This demographic shift has resulted in a greater proportion of female medical students, who are entering medical school in their prime child bearing years and therefore needing to balance motherhood and medicine. Despite social advances in the medical field over the last century, there still exist many challenges in such a balancing act.

The challenges one faces as a mother in medical training are of relatively recent concern and have received little attention in terms of policy and advocacy. These challenges generally fall under two broad categories: individual factors and institutional factors. For example, mothers during their training are faced with professional challenges in terms of both educational progression and career selection, the challenges of caring for children while juggling professional commitments, facing the stigma attached to pregnancy and motherhood in medicine, and having to deal with the lack of administrative policies with regards to unique needs as a mother in medicine.

With an awareness of women's specific challenges with regards to motherhood in medicine in mind, in addition to the awareness of the systemic challenges the Canadian medical system is currently faced with, the profession is at a critical point in terms of addressing these extremely poignant issues. This paper has attempted to outline plausible strategies for Canadian medical schools and the health care system alike to consider. It is our hope that the connection between the support of women in medicine and the future success of the Canadian health care system has been illustrated, and in turn these points can be appropriately addressed by policy makers and the administrative powers at large.

References

1. Adam M. Failing to be a Medicine Mom. *The Vancouver Sun.* A13, 2007.
2. Blair JE, Files JA. In Search of Balance: Medicine, Motherhood and Madness. *J Am Women's Assoc* 58(4):212-216, 2003.
3. Cujec B, Oancia T, Bohm C, Johnson D. Career and parenting satisfaction among medical students, residents and physician teachers at a Canadian medical school. *CMAJ* 162(5):637-640.
4. Ferrier BM, Woodward CA. Career choices, work patterns and perceptions of undergraduate education of McMaster medical graduates: comparison between men and women. *CMAJ* 126:1411-1414, 1982.
5. Gafni RI. Motherhood in medical school. *JAMA* 265(1):116, 1991.
6. Gautam M. Women in medicine: stresses and solutions. *West J Med* 174:37-41, 2001.
7. Gulli C, Lunau K. Adding fuel to the doctor crisis. *Macleans* Jan 14, 08. 63-67, 2008.
8. Hammond JMS Mother, doctor, wife. *Can Fam Physician* 39: 1591-1595, 1993.
9. Little MB. Why can't a woman be more like a man? *N Engl J Med* 323(15):1064-1065, 1990.
10. Martin SC, Parker RM, Arnold RM. Careers of women physicians: choices and constraints. *West J Med* 149:758-760, 1988.
11. Mayer KL, Ho HS, Goodnight JE. Childbearing and childcare in Surgery. *Arch Surg* 136:649-655, 2001.
12. Murphy-Kaulbeck L, McLeod NL. Pregnancy and parental leave in Canadian Obstetrics and Gynecology Residency Programmes. *Journal SOGC* 99:2-3, 2000.
13. Potee RA, Gerber AJ, Ickovics JR. Medicine and motherhood: shifting trends among female physicians from 1922 to 1999. *Acad Med* 74(8):911-919.
14. Phelan ST. Sources of stress and support for the pregnant resident. *Acad Med* 7(6):408-410, 1992.
15. Riddle BS. Resident and student voice: women in medicine. *Am Acad Fam Phys,* 2001.
16. Rosenbaum L. Medicine and motherhood: just doing it all. *MedGenMed* 8(2):64, 2006.
17. Safney HA, Saalwachter-Schulman AR, Nyhof-Young JM, Eidelson B, Mann BD. Influences on medical student career choice: gender or generation? *Arch Surg* 141:1086-1094.
18. Van Dis J. Residency training and pregnancy. *JAMA* 291(5), 2004.
19. Whitfield AGW. Women medical graduates of the University of Birmingham 1959-63. *BMJ* 3:44-46, 1969.