

## ***Improved Care for Women's Health – a Challenge for Public Health***

***To enhance research for improving women's health. A summary of why and how a neglected issue in public health and medicine should be resolved***

A statement that 'diversity is a feature, not a bug', linking the animal kingdom as a model for humanity, in referring to the binary sexual expression of the bluegill sunfish, is not agreeable to everybody (1). That the evolution is not so strict in fixing the sex in fish is quite understandable when it comes to the insemination of about 30,000 eggs. How could this be a model for mankind?

### An Executive Order of the US Biden administration aiming for health research for females

It is not known that the bluegill sunfish, after changing from a male to a female fish, is in danger of committing suicide. That seems to be different from humans, as a recent study discovered, disclosing that within a cohort of adults aged 18 to 60 years with gender affirming surgery, suicide attempts were very high (2). Fortunately, to apply drastic means to become a transwomen or transmen, is not a mass phenomenon. To work against serious health and psychological problems particularly for transwomen and transmen, remains a problem for the treatment of the respected individuals (3, 4). It was not the Trump administration but an Executive Order from the office of US President Biden in March 2024, pointing out that 'women's health research be considered a priority, not an afterthought,' which is immensely important for health policy and public health (5).

### Why was it thought that a presidential Executive Order is necessary?

Those behind the initiative of the Executive Order probably didn't intend to work against the gender issue, but responded to a severe aftereffect of the ideology and its confession that sex is a social construct (6). To mention binary sex categorization in the scientific literature became a sort of unforgivable sin. Usually the terms were expressed as either ciswomen or cismen or described as a 'sex bias,' and finally, scientists have been warned by colleagues to study sex differences (7). Those behind the presidency of Biden must have realized that taking males as the default sex, even in animal experiments, is of serious disadvantage to the health of women, and the academic magazines Nature, as well as Science, were quick in supporting the movement (5, 8). Previous entries in this blog discussed the distinction between men and women in health and disease (9). Evolution is not always one hundred percent without fault, and that also accounts for the development of sex in humans.

### It's the father behind a male successor, not the mother

On rare occasions, there is a mix-up of the X and the Y chromosome, which is used to argue in favor of gender mainstreaming, and even might have influenced historical developments, as the following two examples might illustrate. So, it is not known whether Mrs. Jamjaem Suwannapheng bronze medal in the female boxing category, during the latest Olympic games in Paris, is now upgraded after a recent decision excluding transwomen from female boxing

competition. Still no historian published a book, entertaining us with the hypothetical ideas, how history would have turned, in case monarchies would have known, and not have blamed the inability, and often dismissed, the queen or would have queen, to provide a male successor, since whether a child is a boy depends on the male, because the female, with two X chromosome cannot not contribute the paternal Y chromosome (10).

### The fundamental biological difference between females and males assures the continuity of mankind

Women are the ones assuring the continuation of mankind. But this is not without costs for her health and wellbeing, and giving birth could have been life-threatening in the past (11). Fortunately, nowadays, for most countries, the 'maternal mortality rate' can only be expressed based on the whole country. Between 2020 and 2022, in the UK, thirteen women died during pregnancy out of every 100,000 pregnant women. Going through pregnancy is still a time of discomfort, even without the need for serious intervention from obstetrics.

Without regard to complications, body functions are in a state of turnover. Recently, 'data from 300.000 births reveal how the metabolism is altered by going through pregnancy and delivering a baby.' The whole metabolic setup of the mother, including her endocrine system, liver, and kidney function during pregnancy, supports the fetus, and is abruptly altered again after giving birth, while going through the postnatal period, which lasts longer than previously thought (12).

It certainly is not enough, assuming that the specialties in medicine, namely obstetrics, gynecology, and urology, already care for the differences between males and females in curative medicine. Not only do the sexual organs reflect the significant difference between men and women, but there are substantial variations in the metabolic and hormonal regulation for women, distinct from those of men (13), including the mental and emotional manifestations. The latter is not only shaped by personality and the cultural background but also influenced by the genetic settings (14).

### Women suffer from certain diseases that do not or seldom occur in men

Despite malignancies of the genetic system, some illnesses only happen in women, such as endometriosis, better known as chocolate cysts (15). The patient might suffer from pain for a long time until the correct diagnosis can be made, and must be finally assured by an operation. In the middle of June this year, Bayer Thai and the Medical Department of the Bangkok Metropolitan Administration signed a Memorandum of Understanding (MOU) to improve the awareness of the disease, as well as screening and treatment. Hopefully, this will stimulate the extension of a similar initiative to be spread throughout Thailand (16). Then there are groups of diseases striking females much more often than males, such as autoimmune diseases (17). Besides the predilection of specific ailments in women, the difference between the sexes must also be observed throughout the whole spectrum of the background of morbidity and mortality.

### Women and non-communicable diseases

The latest summary statistics for Thailand in 2018 indicated that non-communicable diseases accounted for 74% of all deaths, while 18% were due to cancer and 23% to heart diseases (18). As far as cancer is concerned, medicine and public health in Thailand are focused on women, such as screening for breast cancer and cervical cancer. The issue of cervical cancer was discussed some time ago in this blog. In Thailand, the Ministry of Public Health recently initiated cervical cancer prevention with a vaccination campaign (19, 20).

### Heart disease mortality is as high as that for men, but the frequency of risk and type of disease differ

To look into cardiovascular diseases (CVD) and how women are faring in comparison to men would be a significant improvement for public health. A telling example is the observation in the US that although the mortality of cardiovascular disease decreased, but men were favored much more by the development than women (21). There is a general misjudgment that female mortality is ruled by cancer, but men succumb to cardiovascular diseases. The truth is that women's CVD mortality resembles that of men, but only occurs ten years later (22). This is mainly due to the difference in fat metabolism between sexes, as reviewed previously (23).

In addition, the difference in risk factors and the type of heart diseases between women and men needs to be more closely assessed to focus more precisely on prevention and therapy for the respective sexes. Obesity might be found more often in women as a significant risk factor for heart diseases, while smoking and hypertension are the risk factors for men. Coronary heart disease might be found more often in men. In women, the diastolic or right heart failure, nowadays diagnosed as heart failure with preserved ejection fraction (HFpEF) might more often affect women than men (24). Not only do morbidity and mortality differ between sexes, but what escaped the general awareness in society is the fundamental difference in how women and men enter the second half of their lives.

### Menopause – a neglected issue

Women face menopause, which cannot be compared to what happens to men as they grow older. Menopause stands for the loss of a female's ability to have children, an elementary change, while men up to old age still might become fathers. It is considered normal that women must accept menopause with the misery of the transition and the health troubles that follow. A condition affecting half of mankind, going along with 'poor sleep, hot flushes, high risk for heart diseases, diabetes, osteoporosis, and memory loss *'has not been more studied, is little short of scandalous'* (25, 26). In planning public health surveys, improved assessment techniques and recent research results of clinical and molecular pathophysiology must be considered.

In view of an aging population and regional differences in morbidity and mortality, it is overdue to know how Thai women are affected by menopause. This must include several epidemiological surveys about risk factors and diseases related to menopause. The surveys should serve as a lengthy discussion on prevention, primary health care, and clinical care, observing sex differences to improve the quality of living for women and men, and should result in a decrease in health care expenses.

### The metabolic syndrome replaced by cardiovascular health metrics

Risk factors for CVD and type 2 diabetes mellitus are summarized as the commonly known 'metabolic syndrome', but it is no longer readily accepted (27). Using the metabolic and behavioral factors, including blood pressure, weight (body mass index (BMI), smoking, diet, physical activity and total cholesterol concentration were summarized in cardiovascular health (CVH) metrics with different levels, related to the risk for all cause and CVD mortality, reaching from 0-1 as ideal CVH metrics up to the unfavorable measure of 5-7. It was found that BMI should be better replaced by the waist-to-height ratio (WHtR). The latter reflects central obesity and is a more significant risk factor than BMI for the Thai population (28).

### The delirious change to central obesity in menopause

Why females before menopause have a higher risk of suffering from cancer but are spared from heart diseases compared to men is due to some preventive factors within their hormonal setting before menopause. Central obesity, characterized as apple shape, is a major risk factor for CVH for men throughout their lives. In contrast, obesity in women, before the menopause, more often develops as cutaneous fat around the hips, known as pear shape. Pregnancy bears the risk of obesity, and after menopause, obesity easily changes to central obesity and increases the risk of developing CVD and diabetes in women. These developments have been described in more detail (23, 24).

### The call for a change in the narrative for women's and men's wellbeing and health

During the time of the primary health care initiative, Thailand was very successful in improving mother and child health care (29). Since then, primary health care has been further developed in Thailand and is still operational. There are all reasons to believe that public health policy can be readjusted and be successful in focusing on women's health without neglecting the health needs of men.

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The final objective could be that each medical doctor is aware, during consultation and treatment, that the patient is either a female or a male. Likewise, public health and health policy should always remember that whatever they do and decide affects two significantly different populations.

### References:

1. Garcia JR. Diversity is a feature, not a bug. Science. 2025;388(6743):1.

2. Straub JJ, Paul KK, Bothwell LG, Deshazo SJ, Golovko G, Miller MS, et al. Risk of Suicide and Self-Harm Following Gender-Affirmation Surgery. *Cureus*. 2024;16(4):e57472.
3. Gender Mainstreaming Part1: The LGBTQ+ movement and gender dysphoria Khon Kaen: Faculty of Public Health, Khon Kaen University, Thailand; 2024 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku>].
4. Gender Mainstreaming Part 2: Transgender operations and hormone application Khon Kaen, Thailand: Faculty of Public Health, Khon Kaen University; 2024 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/227-091267-2>].
5. NIH. President Biden Issues Executive Order on Advancing Women's Health Research and Innovation USA2024 [Available from: <https://orwh.od.nih.gov/in-the-spotlight/all-articles/president-biden-issues-executive-order-on-advancing-womens-health-research-and-innovation>].
6. Kessler S, McKenna, W. Gender: An ethnomethodological approach The University of Chicago Press1978 [Available from: <https://psycnet.apa.org/record/1985-97951-000>].
7. Editorial. Why it's essential to study sex and gender. *Nature*. 2024;629(2 May 2024):7.
8. Oberst J. Minding the gender gap: Supplement in Science/AAAS; 2024 15. Nov 2024.
9. Women are not Men - Returning to the Obvious Khon Kaen, Thailand: Faculty of Public Health, Khon Kaen University; 2025 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/231-030368>].
10. Evolution favors the females but with exceptions - 46,XY DSD, a gold medal, and autoimmune diseases Thailand: Faculty of Public Health, Khon Kaen University; 2024 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/224-030967>].
11. Reid A. How dangerous was childbirth in the past? Cambridge University: Department of Geography and Faculty of History 2025 [Available from: <https://www.campop.geog.cam.ac.uk/blog/2024/09/19/childbirth-in-the-past/>].
12. Biever C. Pregnancy's true toll on the body: huge birth study paints most detailed picture yet. *Nature*. 2025;640(8057):16-7.
13. Grygiel-Gorniak B, Ziolkowska-Suchanek I, Szymkowiak L, Rozwadowska N, Kaczmarek E. The Influence of FAM13A and PPAR-gamma2 Gene Polymorphisms on the Metabolic State of Postmenopausal Women. *Genes (Basel)*. 2023;14(4).
14. Ngun TC, Ghahramani N, Sanchez FJ, Bocklandt S, Vilain E. The genetics of sex differences in brain and behavior. *Front Neuroendocrinol*. 2011;32(2):227-46.
15. The continuously complaining wife about chronic pain is not neurotic, but has endometriosis Thailand: Faculty of Public Health, Khon Kaen University; 2015 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/234-140568>].
16. Bayer, BMA extend campaign against the chocolate cysts Bangkok, Thailand: Newspaper Bangkok P0st 2025 [Available from: <https://www.bangkokpost.com/thailand/pr/3054175/bayer-bma-extend-campaign-against-chocolate-cysts->].
17. Evolution favors the females but with exceptions - 46,XY DSD, a gold medal, and autoimmune diseases Khon Kaen, Thailand: Faculty of Public Health, Khon Kaen University; 2024 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/224-030967>].

18. WHO. Non-communicable Diseases (NCD) Country Profile: Thailand: WHO; 2018 [Available from: <https://www.who.int/publications/m/item/noncommunicable-diseases-tha-country-profile-2018>].
19. Cervical cancer - vaccination, modern diagnostic technology, and HPV self-sampling reduces incidence and mortality Thailand: Faculty of Public Health, Khon Kaen University; 2022 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/192-090265>].
20. Thailand's Free Cervical Cancer Vaccine Program. Empowering Young Women Thailand2025 [Available from: <https://thai.news/news/thailand/thailands-free-cervical-cancer-vaccine-program-empowering-young-women>].
21. Benjamin EJ, Smith, S.C., Cooper, R.S., Hill, M.N., Luepker, R.V. Task Force #1 - Magnitude of the Prevention Problem : Opportunities and Challenges. J Am Coll Cardiol 2002;40(4):16.
22. Maas AH, Appelman YE. Gender differences in coronary heart disease. Neth Heart J. 2010;18(12):598-602.
23. Feature of diseases differ for women and men - Obesity, apple and pear, and the risk for heart diseases Khon Kaen, Thailand: Faculty of Public Health, Khon Kaen University; 2025 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/232-140368>].
24. Features of diseases distinctly differ from women and men. Focus on menopause and women 's heart illnesses is needed Thailand: Faculty of Public Health, KHon Kaen University; 2025 [Available from: <https://ph.kku.ac.th/eng/index.php/research/journal-club-phkku/233-310368>].
25. Menopause research is globally underfunded. It's time to change that. Nature. 2025;637(8047):763.
26. Peebles L. The new science of menopause: these emerging therapies could change women's health. Nature. 2025;637(8047):782-4.
27. Alberti KG, Zimmet PZ. Should we dump the metabolic syndrome? No. BMJ. 2008;336(7645):641.
28. Aekplakorn W, Neelapaichit N, Chariyalertsak S, Kessomboon P, Assanangkornchai S, Taneepanichskul S, et al. Ideal cardiovascular health and all-cause or cardiovascular mortality in a longitudinal study of the Thai National Health Examination Survey IV and V. Sci Rep. 2023;13(1):2781.
29. Rohde J, Cousens S, Chopra M, Tangcharoensathien V, Black R, Bhutta ZA, et al. 30 years after Alma-Ata: has primary health care worked in countries? Lancet. 2008;372(9642):950-61.

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Grammarly software was used to improve English, but the AI function was disabled.