

## Gender and Stress during the Covid 19 Crisis

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*{Translated from Dutch}*

The statistics on the covid 19 epidemic published by the Dutch National Health Institute (RIVM) are surprising and urge us to reflect. Until the beginning of May more women (26.000) than men (15.000) were screened positive for a covid-19 infection. But far more men (6800) had to be admitted in hospital than women (4300) because of the seriousness of their condition. Moreover, the mortality amongst men, both at home as in care (3000/15.000 20%) as much higher than amongst women (2300/25.000 thus 9%). Even if these figures only include those formally diagnosed, the differences are striking. These differences are suggestive for gender differences in reaction to the covid-19 virus. Men are more vulnerable to acute infections, that affect them more dramatically as seen during this epidemic. It is well established that pregnancy protects against infectious diseases. During this pandemic, along with lung damage, kidney failure and venous thromboembolism have been described on a larger scale. One of the hypotheses that have been put forward is that of a so called "cytokine storm" in other words an exaggerated and uncontrollable immune response. This reaction may induce a negative and catastrophically vicious spiral in intensive care and cause death as a consequence of the consecutive failure of many organ systems. Cytokines are small proteins that normally regulate the immune response. It appears the female hormones like oestradiol 10 (La Vignera et al. 2020) can slow down this fatal mechanism. And thus, this could explain the milder evolution of the covid-19 infection in women.

The fact that men and women show different responses to infectious disease was established well before this covid-19 pandemic. These differences are related to another gender difference namely their reaction to stress. In face of social stress or stress stemming from disaster, there are strong gender differences in the way men and women react. Under similar circumstances men display acute infections, hypertension or diabetes type 2. Whereas women tend to show more chronic diseases and auto-immune reactions (rheumatism, fatigue, thyroid problems) and far more mental problems (anxiety and depression) than (van Wijngaarden-Cremers 2015). These psychosomatic effects between gender parallel psychological and behavioural reactions. Women tend to demonstrate a short but strong HPA (hypothalamus-pituitary-adrenal) response, whereas men tend to show a prolonged yet less steep HPA response to stress (van Wijngaarden-Cremers 2015). Statistically women tend significantly more often to internalize their tensions (anxiety, depression and psychosomatic symptoms), and feel guilty without cause. Whereas men manage to externalise their tensions (anger and physical aggression) and blame external circumstances. Obviously, these

differences are statistically significant meaning that they apply for gender as groups and not to all men not all women! Unfortunately, under the current lockdown circumstances men could not direct their anger toward those that they held responsible for their misery, neither sublimate them sufficiently in acceptable manners such as through sporting. Under those circumstances domestic violence has regrettably worldwide dramatically increased. This again is by no means a new phenomenon. In the lockdown women and children are strongly isolated and exposed 24/7 to their aggressive male partners/{step}fathers. Often, they lack the possibility to signal their problems or ask for help. (In the Netherlands a code has been proposed: any women or child asking for a mask-19 at a pharmacy or drugstore could by doing so signal her/its perilous situation... but do all illiterate or non-native speakers, have access to this information?).

Many studies have shown how vulnerable women are under circumstances of crisis of disaster. Painful examples have been well described recently (Bimal Kanti Paul 2011). After the tsunami in Southern Asia, it appeared how even more dramatic the for women appeared to be: having lost everything and rightless as widows or if their husbands had disappeared. In many cases it was reported that women had to prostitute themselves in order to be able to feed their children, exposed to violence and dishonour. This applies similarly in circumstances of revolution or war or other natural disasters as earthquakes. Though to a far lesser degree, in terms of economic dependency the situation of women is still far from equitable. And security and safety of women and children is yet far from granted. In this country as in many other European countries, though aware of these risks, authorities have insufficiently anticipated to the exceptional circumstances of the past months.

Recently it has become clear the sexual orientation (Juster et al. 2015) also impacts the reaction to stress. Though by no means different in terms of levels of hormones it appears the lesbian women display less strong cortisol reactions to stress than their heterosexual fellow women. Likewise, homosexual men have shorter and more intense reactions to stress than heterosexual men. Finally, it appears that transgenders (Valentine & Shiperd 2016) display the strongest response to stress than all the other groups. Possibly this is explained by the fact that this group is continuously exposed to social stress, discrimination and stigmatisation. And that their sex hormones being given in standard doses are not adaptive to changing circumstances.

It is important to be aware of the fact that, even in western societies, social differences between gender are still large. For example, in the Netherlands, despite strong progress since 2014, currently only 60% of the women are “financially independent” meaning having at least the legal minimum income, in comparison with more that 80% in men as reported by the SCP (National Institute for Social Statistics 2019). In contrast the number of single parent families (in 97% single mother) has greatly increased meaning that currently in our country 1/5 of the youth (0-18) live under these circumstances, often on the verge of poverty. Economical dependency is a great source of stress under the current circumstances. The gender gap widens, as in the Netherlands more women than

men have lost their jobs. Self-employed women have been more badly hit than their male counterparts, as they have less opportunity for working. This situation applies to more countries (Marie Charrel le Monde 12th May 2020). A solid explanation is that women are economically less available, as they forcibly take, in most cases, nearly the entire domestic responsibility in terms of household, feeding the family and looking after the children. Whereas self-employed men had far more time at hand to accept projects where they could work on from home gaining time otherwise lost in travelling around. A little reverse of the situation merits to be noted: fewer small enterprises run by women went bankrupt. As women took less risks and had enough reserves to survive. For example, no “female” dentistry cabinets went bankrupt, in contrast with “male” practices where much of the benefits had been invested in expensive cars and houses instead of making savings for harsher times.

Gender differences play a substantial role under circumstances of crises as painfully illustrated during this covid-19 pandemic. But it is not only the nature of gender that explains the differences. The actual crisis shows that the social context (and education) greatly influence the greatening of the gender gap during this health, economic and cultural crisis.

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