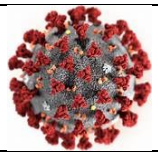
National COVID-19 Science Task Force (NCS-TF)



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In response to request from:	**Date of request:**
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Contact person: samia.hurst@unige.ch	
Comment on planned updates : Updates with new data and analysis of the Swiss Corona Stress Study	

Title: Psychological effects of confinement and deconfinement

Summary of request/problem : The Scientific task force was tasked with identifying psychological effects of confinement and deconfinement. The Ethical, legal, and social group worked with the Swiss National Science Foundation division 1 and with the authors of the Swiss Corona Stress Study to develop the present brief.

Executive summary

Studies from several countries, including China, USA, and Iran revealed a high prevalence of distress and mental health problems in the population due to the COVID-19 crisis. It is important to note that the psychological responses to the pandemic and the countermeasures taken are likely to depend on country-specific socioeconomic and health factors and country-specific containment measures. The survey of the *Swiss Corona Stress Study* in over 10'000 individuals revealed that in Switzerland the psychological reactions to the lockdown were very diverse: While 50% of the participants reported an increase in stress levels, 24% reported no change, and 26% a decrease in stress levels during lockdown as compared to the time before the pandemic. The changes in stress levels were highly correlated with changes in depressive symptoms. The prevalence of moderately severe or severe depressive symptoms raised from 3.4% (before the corona crisis) to 9.1% (during lockdown). The study also revealed, which lockdown related factors were most strongly related with distress. Among the top ranked were burden due to changes at work/school, burden of childcare, loneliness in people living alone, and burden of not being able to spend more time with others. The findings from the second wave of 10'000 participants in Switzerland that was acquired in the phase of the partial deconfinement showed that anxiety levels decreased as compared to the lockdown phase, but stress levels and depressive symptoms remained comparable.

With regard to psychological aspects and mental health consequences of future COVID-19 countermeasures (confinement) we recommend:

- Inclusion of mitigation measures regarding the main stress factors whenever possible
- Inform the public about potential mental health consequences and the importance to seek professional help if needed.
- Maintain good communication with the public and continue to build on individual and collective responsibility to increase willingness to support the measures.

For the phase of deconfinement we recommend clear communication to avoid the possible misconception that the pandemic threat is over as soon as some pandemic control measures are lifted.

Main text

In this brief, we address the following questions:

1. **What is the impact of the currently implemented pandemic response measures on society (e.g. psychological aspects)?**
2. **How long could they be continued without leading to a change in the mood of society towards non-acceptance?**
3. **Elements that may help people to deal with the situation, in psychosocial terms**

What is the impact of the currently implemented pandemic response measures on society (e.g. psychological aspects)?

Confinement has multiple psychological effects

The mental health effects of the coronavirus disease 2019 (COVID-19) pandemic might be profound (Holmes 2020). A recent literature review (Mengin 2020) outlines boredom, social isolation, stress, sleep deprivation, anxiety, post-traumatic stress disorder, depression, suicidal or addictive behaviours, and domestic violence as possible effects of confinement. Successful use of confinement as a public health measure requires us to reduce, as far as possible, the negative effects associated with it.

Hospital staff who might have come into contact with SARS-CoV-2 were significantly more likely to report exhaustion, detachment from others, anxiety when dealing with febrile patients, irritability, insomnia, poor concentration and indecisiveness, deteriorating work performance, and reluctance to work or consideration of resignation (Brooks 2020). Symptoms such as depressive symptoms, emotional disturbances, stress, irritability, insomnia, low mood, PTSD, anger, emotional exhaustion, and dependency symptoms could endure for years after confinement. A qualitative study reported that several participants described long-term behavioral changes after the confinement period, such as vigilant handwashing and avoidance of crowds and, for some, the return to normality was delayed by many months.

Suicide is likely to become a more pressing concern as the pandemic spreads and has longer-term effects on the general population, the economy, and vulnerable groups (Gunnell 2020). There is some evidence that deaths by suicide increased in the USA during the 1918–19 influenza pandemic and among older people in Hong Kong during the 2003 severe acute respiratory syndrome (SARS) epidemic (Cheung 2008). Those with psychiatric disorders might experience worsening symptoms and others might develop new mental health problems, especially depression, anxiety, and post-traumatic stress (all associated with increased suicide risk). Loss of employment and financial stressors are well-recognized risk factors for suicide (Kawohl and Nordt, The Lancet 2020). Domestic violence and alcohol consumption might increase during lockdown and cause an increase in health issues and suicide. Similarly, social isolation, entrapment, and loneliness contribute to suicide risk and are likely to increase during the lockdown. The fact that there is an increase of access to potential means is a major risk factor for suicide. In the current environment, certain lethal means (eg, firearms, pesticides, and analgesics) are particularly present in homes because of COVID-19. According to the authors, mental health consequences are likely to be present for longer and peak later than the actual pandemic.

When children are out of school (e.g, weekends and summer holidays), they are physically less active, have much longer screen time, irregular sleep patterns, and less favorable diets, resulting in weight gain and a loss of cardiorespiratory fitness (Wang 2020). This pattern is very likely to be even more problematic with the confinement measures because children and adolescents cannot have outdoor activities. Brooks et al. (2020, The Lancet), also mention a series of confinement-related variables that can have a psychological impact on children and adolescents: Stressors such as prolonged duration of confinement, fear of infection, frustration and boredom, inadequate information, lack of in-person contact with classmates, friends, and teachers, lack of personal space at home, and family financial loss can have problematic and enduring effects on children and adolescents. Moreover, in confinement they are physically less active, have much longer screen time, irregular sleep patterns, and less favorable diets, resulting in weight gain and a loss of cardiorespiratory fitness. Sprang and Silman (2013) showed that disease-containment measures such as quarantine and isolation can be traumatizing to a significant portion of children and parents. In their study, criteria for PTSD was met in 30% of isolated or quarantined children based on parental reports, and 25% of quarantined or isolated parents (based on self-reports).

For the current pandemic, surveys in several countries, including China, USA, and Iran revealed a high prevalence of distress in the population. It is important to note, however, that the psychological reactions to the pandemic and the countermeasures taken likely depend on country-specific socioeconomic and healthcare factors and country-specific lockdown measures. Therefore, findings of studies from other countries cannot be directly transferred to the situation in Switzerland.

The situation in Switzerland

De Quervain and colleagues performed an online survey study, the *Swiss Corona Stress Study* (https://osf.io/jqw6a/) in more than 10'000 individuals living in Switzerland to assess how subjective stress levels and depressive symptoms are affected by the lockdown, to explore underlying factors and to identify potential stress-protecting behaviors. Data collected over a period of 3 days, starting 3 weeks after lockdown, was analysed.

While 24% of the participants reported no change in stress levels, 50% of the participants reported an increase in stress levels during lockdown as compared to the time before the COVID-19 crisis. The study identified several potential sources for people feeling more stressed during the lockdown, such as the burden related to changes at work or school, problems with childcare or burden of not being able to spend more time with others (see Table 1).

Table 1

Lockdown-related burdens related to an increase in stress levels (top 10)

1	burden due to changes at school	r=0.39	p=1.2E-52
2	burden due to changes at work	r=0.37	p=5.4E-233
3	burden of childcare	r=0.30	p=8.5E-49
4	burden of living alone	r=0.30	p=1.4E-43
5	burden due to thoughts about the future	r=0.27	p=1.5E-100
6	burden of not being able to spend more time with others	r=0.25	p=5.0E-152
7	burden of reduced personal freedom	r=0.23	p=1.5E-122
8	burden due to the switch to digital media/class/teaching	r=0.20	p=3.9E-99
9	burden due to keeping to the 2-meter security distance	r=0.19	p=9.2E-89
10	burden due to an increase of conflicts at home	r=0.19	p=2.8E-71

The changs in stress levels was highly correlated with the change in depressive symptoms. The prevalence of moderately severe or severe depressive symptoms (PHQ-9 score ≥ 15) increased from 3.4% (before the corona crisis) to 9.1% (during lockdown), of which 20% did not complain about depressive symptoms before the crisis. Prevalence of daily suicidal thoughts raised from 0.8% (before the corona crisis) to 1.5% (during lockdown).

Of note, 26% of all participants showed a decrease in stress levels, which was related to feeling relieved by the lockdown-related changes (r = - 0.50), and feeling confident to overcome this crisis well (r = - 0.32).

The lockdown-related changes in stress levels were largly independent of sociodemographic variables, such as gender, age, religious affiliation or level of education ($|r|<0.1$).

Furthermore, this study identified some behaviors that were associated with a lower incidence of stress, including physical activity, devoting more time to a hobby or a new project and consuming less coronavirus-related news. Whereas these relationships do not inform us about causality or direction of causality, for some factors, such as engaging in physical exercise, interventional studies have provided evidence for a protective effect with regard to stress and depression.

A second wave of 10'000 participants in Switzerland was acquired in the phase of the partial deconfinement (loosening the lockdown) between May 11 and June 1, 2020. While anxiety levels decreased as compared to wave 1 (during lockdown), stress levels and depressive symptoms were comparable. The prevalence of moderately severe or severe depressive symptoms (PHQ-9 score ≥ 15) remained high (11.7%) during the time period of loosening.

Diversity of reactions

The findings of the *Swiss Corona Stress Study* revealed that the psychological reactions to the pandemic crisis and the countermeasures taken are very diverse, ranging from a large increase in distress and depressive symptomatology to a lockdown-related relief and decrease in stress levels.

More generally, people who are not at risk, medically or economically, or not under major workload, may find ways to live well with the situation, and explore, even at times creatively, its advantages, in the present and the future; people who are more fragile, psychologically or economically (e.g. professional uncertainty), or submitted to long-terms stress (work, family, illness), or having to deal with events on a day-to-day basis, feel the growing pressure of the confinement. This may lead to unstable psychological states, which may result in feeling helpless (inward), blaming others (outward), or even indulging in conspiracy theories.

In France, women, foreign-born residents, and individuals facing financial hardship were subject to greater emotional strain than the rest of the population. Gender inequalities have been particularly reinforced during the lockdown: women have been spending even more time than usual cleaning and taking care of others. Although the Covid-19 virus tends to disproportionately strike men, also with increased mortality, this contrasts with, the consequences of the lockdown which more intensely affect women (Recchi 2020). Psychological consequences interact with family structures and living conditions as well as available social support. The distribution of the latter characteristics in the population is crucial to estimate the effects of the lockdown. There is room to develop a measure of populations "at psychological and social risk" in time of COVID.

From a historical perspective, the Covid19 pandemic tends to repeat many of the social reactions to epidemics in history. The stages of an epidemic are clearly depicted by Jean Delumeau ("Typologie des comportements collectifs en temps de peste") and in a fictional form, in Daniel Defoe's *Journal of a Plague Year.* Today, it's difficult to follow the Covid19 crisis without identifying them: denial or minimization of danger; the flight of the rich (secondary houses); separation of the sick; limitations set to public gatherings (schools closed, religious ceremonies reduced, etc.); rumors about collective poisoning; identification of possible scapegoats; incrimination of healers; lack of facilities to care for the sick; strong reactions to proximity with death (have fun, violence, crime); technical difficulties in dealing with the bodies; a polarization of the population into two groups (heros / cowards).

The communication of pandemic measures has psychological effects

How the measures are communicated is crucial for several psychological effects. The effects of decision uncertainty can be difficult to manage when measures change frequently. Stricter measures with a known time frame may allow a better planning of activities under constraint and provide with a sense of protection.

Acceptance in the population is related not only to the duration of the lockdown measures, but also to the level of perceived risk. Risk perception may be altered by information overload. Too much information cannot be processed and this can decrease the effect on behavior, as risk perception is altered. Contradictory information will produce uncertainty and therefore reduce the credibility of its sources; again, risk perception will be altered.

Emotions influence behavior and decision-making - sometimes durably

Emotional learning is a powerful adaptive mechanism, but the acquisition of fear responses to previously neutral situations also underlies anxiety and stress disorders. A pandemic and the countermeasures taken can cause considerable fear, and the stress-related symptoms triggered by it can last for years (Brooks 2020). The authors note that having adequate basic supplies (food, clothes, living arrangements) during confinement is protective. The longer « other people » are

associated to fear, the riskier it is that, after the confinement, the « fear » response will remain of "other people" (Reynolds 2008). For some, the return to normality can be delayed for months (Cava 2005).

It is important to note that fear not only results from the identified threat (i.e. the coronavirus) but also from the general uncertainty about a situation. The latter points to the importance of clear and non-contradictory communication to the public.

Another emotion that is certainly widely felt in this period is anger (and a related emotion: frustration), that can lead to risky decision-making (while fear tends to decrease risky decision-making). Ambivalent event elicits both an approach and an avoidance behavior. If the intensity of the approach motivation is similar to the intensity of the avoidance motivation, then it can elicit a psychological conflict and corresponding anxiety. For instance, going back to school is a typical example: parents and children want this event to happen but at the same time are afraid of this very same event. In fact, even simply going out for a walk can be appraised as both positive (pleasant) and negative (risky). Such psychological conflict is difficult to cope with.

How long could they be continued without leading to a change in the mood of society towards non-acceptance?

One of the key messages of Brooks et al. (2020) is that the confinement period should be short and the duration should not be changed unless in extreme circumstances. The authors also note that most of the adverse effects come from the imposition of a restriction of liberty, and that voluntary confinement is associated with less distress and fewer long-term complications. It is thus probably even more important to emphasize the autonomy of individuals in choosing confinement if the crisis has a long duration. The authors mentioned that three studies showed that longer durations of confinement were associated with poorer mental health, specifically posttraumatic stress symptoms, avoidance behaviors, and anger.

Brooks et al. (2020) give a series of recommendations

1) Keep the confinement as short as possible,
2) Give people as much information as possible,
3) Provide adequate supplies,
4) Reduce the boredom,
5) Improve communication,
6) Health-care workers deserve special attention,
7) Altruism is better than compulsion.

Many influential psychological theories consider that human beings have several needs that are particularly important to fulfill for psychological well-being. In particular, the needs of Autonomy, Competence, and Relatedness are often considered as psychologically very important. This is useful to mention here because confinement, in particular in the long run, may be adverse to all of these three basic psychological needs. Strategies, however, can be found in public policy to fulfill these needs: for example what is currently done in Switzerland, as opposed to France, in terms of emphasis on individual responsibility is positive for the need for Autonomy (deciding oneself can increase well-being). Satisfying the need for competence is challenging in a period of confinement with teleworking. Finding ways in which individuals can use their personal competences nevertheless may be important.

Different studies confirm that a major obstacle to compliance for household quarantine or isolation is concern over loss of income or employment due to prolonged absence from work. In particular, public compliance rates with self-quarantine or isolation were assessed depending on compensation for lost wages. The results suggest that when compensation was assumed, the compliance rate was 94%; yet, when compensation was removed, the compliance rate dropped to less than 57%. More generally, the study suggests that any individual can become disobedient to public health instructions issued during a disease outbreak if compensation for lost wages is removed or absent (Bodas 2020).

Physical distance should not mean social distance: during the confinement, it is important to keep social links with the family and friends, and it is particularly the case if the pandemic responses were to be continued. Social Support is a major buffer against stress. It is essential to keep social relations despite the physical distance. Virtual discussions (phone, webcams) are good but actually planning safe ways where individuals can see and meet each other while respecting the health measures would certainly be useful (and would also allow to avoid meetings that are less respectful of the health measures).

The issue of « behavior change » is critical here, even more so if measures remain in place for a long period. Redelmeier & Shafir (2020) note for instance that human behavior is heavily influenced by deeply ingrained societal norms. Welcoming patients warmly, standing close to colleagues, dining together with friends, and caring for grandparents are all behaviors that have been promoted and polished over a lifetime. Such norms are not easy to change. Strategies for reducing transmission have included repeated hand washing, physical distancing, and self-isolation and these preventive strategies are immediately available, highly affordable, and distinctly effective; however, a major challenge is the need to maintain adherence. The authors review eight behavioral pitfalls reported by psychological science, and suggest that awareness of these pitfalls might help to maintain behavior change to fight the COVID-19 crisis. The table summarizing these pitfalls and strategies to deal with them is reproduced here:

	Pattern	Strategy	Example
Fear of the unknown	Unknown risks attract more attention than do regular events	Provide repeated reminders after the initial shock fades	"We've been at it for a while, yet must be as vigilant as when it was all new."
Personal embarrassment	Unintended personal lapses add to later self-blame or stigma	Acknowledge that this reaction is normal behaviour and use celebrity patients to lessen stigma	"This can happen to everybody. Tom Hanks acquired COVID-19 infection too."
Neglect of competing risk	Prominent threats deflect attention from other risks	Stay mindful of mundane everyday hazards that can be overlooked	"This pandemic is not the only risk to your health that needs attention."
Invisible diseases	Problems might be missed if objective data are absent	Guard against mental health complications	"Social distancing causes stress due to isolation. How are you coping?"
No clear feedback	Learning requires reliable follow-up	Avoid scrutinising rapidly fluctuating and unstable updates	"Focus on your own planned behaviour and not population statistics that change daily."
Status quo bias	Strong desire to resist change	Emphasise potential future gains	"This crisis can help us to look at many things anew."
Ingrained societal norms	Habits are difficult to change	Keep reminding and highlighting others who have changed behaviours	"Remember to avoid touching your face and politely correct those still doing it."
Hindsight bias	Summary judgments are weighed by final outcomes	Avoid second guessing early attempts too harshly	"The pandemic was hard to predict and difficult to manage at the time."

Table: **Summary of pitfalls in judgment**

Elements that may help people to deal with the situation, in psychosocial terms

At the level of *sense-making*: people draw on various resources to make sense of the crises. Overarching narratives or metaphors play a key role in how people define the event therefore (e.g. the crises is a war), and their role in it. So far, Switzerland has avoided the war scenario chosen by other countries, emphasizing instead solidarity, collegiality, the importance of being together in front of a new and challenging experience. This may offer a basis for recovering feeling of agency.

Trust: in times of uncertainty, being able to trust someone/ some perspective / authorities may play an important role. In Switzerland, public media, figures of authority (i.e., the government) in most cases appear clear, solid, close to people, yet honest when expressing doubts and uncertainties – that is, taking people seriously. To be avoided: strong statements in case of doubt, which are shown to be false shortly afterwards.

Imagination of the future: this has two parts: (i) the temporal horizon of the crises; now that there is a temporal horizon, people may start to imagine their future, or contest the proposition; yet if it was to be changed, again, it can raise uncertainty and anxiety. (ii) People's capacity to imagine their daily lives, alternatives and the future. Anxiety and social isolation limit this process. Now the "after" is at the horizon; for imagining, a plurality of material to be used as resources is important. Hence: not only apocalyptic futures, but alternative scenarios, real or in fiction; also examples of people's daily creativity in times of crises are important to feed this.

Provision for fundamental needs, such having adequate basic supplies (eg, food, water, clothes, or accommodation) during confinement is also a protective measure; where this was not the case, it was a source of frustration and continued to be associated with anxiety and anger 4–6 months after release (Jeong 2016). Having access to green spaces and nature also provides some relief (Recchi 2020). Providing people with assurances about their household income during times of confinement and after is an important component in compliance with public health measures. Should this aspect be ignored, the risk is reducing the effectiveness of the measures to contain the spread of the disease by prompting people to breach self-confinement.

Precautions may also be needed to accompany the lifting of confinement measures. It could be relevant to consider strategies to limit the risk of stigmatization and rejection of people having been particularly close to the infection, either professionally or as patients, to provide continuing general education about the disease to the general public, more generally about "risk literacy" (the ability to deal with uncertainties in an informed way), promote an altruistic attitude and take fair measures in order to avoid feelings of injustice, that others will benefit from one's situation. Particular attention should be paid to the possible misconception that the pandemic threat is over as soon as some pandemic countermeasures are lifted.

Unresolved issues

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Appendices