Survey on “Knowledge and Attitudes Regarding the Coronavirus Pandemic” in the Austrian, German and Swiss population

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The survey on “Knowledge and Attitudes Regarding the Coronavirus Pandemic” was available online from 17. Jan 2021 to 19. Feb 2021 for the Austrian population. The German version closed a week later (26. Feb 2021). The aim of the study was to obtain a representative overview of the assessment of the current pandemic situation by the German-speaking general population (Austria, Germany, and Switzerland).

Results – Austrian population

Here data of 3848 adults living in Austria were analysed (64.4% female, 35.3% male, 0.3% diverse). Broad advertisement of the survey in the Austrian media via the Austrian Press Agency (APA) and ORF (Austrian Broadcasting Corporation) as well as a homogeneous age distribution (see Table 1) made it possible to obtain a good and “representative” overview of the current attitudes and state of mind of the Austrian society on the subject of "Corona". Only the 60-69 and 70+ age groups were slightly less represented, with 12.81% as expected for an online survey.

Table 1. Age distribution of Austrian population in survey

Age-group	<i>n</i>	%
18-29	723	18.79%
30-39	872	22.66%
40-49	983	25.55%
50-59	777	20.19%
60-69	387	10.06%
70+	106	2.75%
Total	3848	100.00%

In addition, we compared two extreme groups of people in the sample: those who almost exclusively consume public television ($n = 874$) vs. those who also frequently consume private television (and do not consume public television daily, $n = 812$). Additionally, we compared non-academic participants ($n = 2082$) vs. academic participants ($n = 1766$). Both comparisons revealed

contrasting responses, which are explained below as a complement to each section. In contrast, the effects across age and gender were largely equally distributed.

Perceived Restriction & Public and Private Statements

89.2% of the participants feel „very“ (60.4%) or at least „somewhat“ (28.8%) constrained by the Corona-related measures. Most participants (81.5%) share these concerns/displeasure in private with friends or family „regularly“ or „several times“. Here, all age groups are equally critical. 27.7% of participants also engage publicly by posting on forums, participating in demonstrations, or even taking legal action. More than one-third of participants (39.2%) were bothered „all the time“ or „most of the time“ by feelings of anger and unease as they have the impression that reports are not objective.

57.1% of graduate participants and 63.2% of non-graduate participants felt „very“ constrained by Corona-related actions. Evaluating the same question for the two TV consumption groups reveals a feeling of constrain for 47.7% of the public TV viewers vs. 72.5% of the private TV viewers. The groups beyond the age of 60 also feel „very“ (45.1%) or „somewhat“ (35.3%) restricted.

Their concerns/displeasure about Corona is shared in private with friends or family by 65.8% of public TV viewers and 94.4% of private TV viewers „regularly“ or „several times“. Women and men are equally concerned and critical here, and even 71% of the 60+ group express their concerns about Corona-related measures and changes in the law „regularly“ or „several times“ in private.

Feelings of anger and unease due to the impression that reports are not objective preoccupied 31.7% of academics and 45.5% of non-academics. Again, viewers of primarily public vs. private television had clearly different views: 10.4% compared with 68.6% rated reporting as not objective and neutral „all the time“ or „most of the time“.

Fears

The greatest fears perceived in the current pandemic are 1) that a close relative will get infected (67.2%), 2) the economic damage (46.9%) and 3) the restriction of freedom of expression or of fundamental rights (46%). On the other hand, the fear of actually dying from the coronavirus disease was mentioned least frequently (15.2%).

In a comparative analysis based on which TV medium is primarily consumed to gain information about the corona pandemic, opinions once again differed greatly: while 80.2% of public TV viewers fear that a close relative will be infected, only 45.2% of private TV viewers do. In terms of restrictions on fundamental rights and freedom of expression, 24.6% of public TV viewers are worried, compared

53 with 76.3% of private TV viewers. Physical long-term consequences on the other hand are feared by
54 53.4% of public TV vs. 21.1% of private TV viewers. Even suffering from severe symptoms due to
55 Corona is feared by 53.1% of public vs. 15.9% of private TV consumers. Actual fear of dying due to
56 Corona is found among 18.1% of public TV viewers and only 9.1% of private TV viewers.

57 Fear of psychological damage is slightly higher among women (38.2%) than among men (31.4%)
58 and higher among non-academics (39.4%) than among academics (32.3%). Economic damage is
59 feared by every second citizen (51.8% of non-academics and 41.7% of academics).

60

61 **Perceived Burdens**

62 The most worrisome burdens in the pandemic are: 1) not being able to maintain social contacts
63 (78.5% not being able to meet friends, 78% not being able to meet relatives), 2) home-schooling for
64 parents (70.3%) and 3) economic consequences (70.2%). Even in the 60+ group, not being able to
65 meet friends or relatives in person is ranked in the top 3 most stressful factors and with 80.3%.
66 Surprisingly, the fear of being a carrier of the disease (45.1%), of falling ill oneself (24.4%) or of a
67 lack of care due to a possible overload of the health care system (44.3%) is rated as less stressful than
68 the previously mentioned social and economic consequences.

69 In the gender comparison, 80.6% of women and 73.4% of men stated that it was („very“ or „slightly“)
70 burdensome to no longer meet relatives in person on a regular basis. Women (58.3%) were more
71 concerned than men (46.2%) about a close relative becoming ill. Separate analysis by those who
72 primarily consume public vs. those who also regularly consume private television again revealed
73 much greater concern among the former (public TV) group (75.7% vs. 31.6%). Personal concern
74 about contracting Corona was also reported to be much higher among public-television viewers
75 (63.7%) than among those who in addition regularly watch private television (23.6%).

76 Private conflicts due to discussions regarding Corona are much more common among women (52.6%
77 vs. 43.4% for men) and viewers of private TV (62.5% vs. 37.9% for public TV). Furthermore, women
78 experience the topic of home-schooling as very stressful (74.7% vs. 61.7% for the male counterpart).
79 Women also experience hearing/watching news about Corona (65.5%) as significantly more stressful
80 than men (52.1%).

81 Economic consequences are perceived by women (73%) as („very“) burdensome, and even for 2/3 of
82 the men (65.3%). It is interesting to note that, once again, people who regularly watch private
83 television (84.8%) are generally significantly more worried than people who mainly watch public
84 television (57.3%).

The same picture is found for the fear of collateral health damage (i.e., a lack of care for other illnesses, postponed surgeries, etc.) with 70.6% of („very“) concerned women and 62.3% of („very“) concerned men, and 58.6% for public TV viewers vs. 79.7% for those who regularly consume private TV.

When asked about impaired sleep patterns due to the pandemic, more women report problems (30.4%) than men (19.5%). In general worse perceived sleep quality is found in people who are personally worried by COVID-19 across cultures as we recently published [1].

Estimated Probability of Falling Ill

The answer to the question "How likely do you think "Corona" is to cause you a life-threatening illness (in %) over the next 12 months?" is also very interesting. Based on all cases already infected with SARS-CoV-2, the statistical probability i) of being hospitalized ranges from 0.25% (10-29 years) to 17.1% (75-79 years), ii) of ending up in the ICU ranges from 0.24% (18-29 years) to 2.81% (70+). [Note: 14% of hospitalized Covid-19 sufferers receive intensive care on average; source RKI]. Note that the subjectively experienced risk is overestimated 6-fold (70+) to 58-fold (<39) in the Austrian population. That is, Austrian citizens (18-69) expect a chance of about 1:10 to need intensive care in a hospital when they get infected by SARS-CoV-2. Scientifically, the more realistic chance of ICU admission is at max. 1 in 400 for age 18-49, and 1:100 for an age up to 69 according to the Swiss database (Table 2). Even lower risks are provided by the QCOVID risk calculator from the University of Oxford (see below) [2] and for England.

Table 2. Risk of hospitalisation and mortality from Covid-19 by age. Data is from the federal office of public health Switzerland.

Age	Cases		Hospitalisation		Cases Hospital	Mortality		Case fatality	Hospitalisation by age		Age groups survey	Probability infected and ICU	Subjective estimate to come to ICU due to Covid-19 (!)	FACTOR of subjective over-estimation of risk
	N	Incidence	N	Incidence		N	incidence		N	%				
0-9	2037	232	62	7	0.2%	0	0	0.0%	0.64%	0.00%				
10-19	20775	2450	51	6	0.2%	0	0	0.0%	1.73%	0.00%	18-29	0.24%	10,22%	43
20-29	45321	4442	137	13	0.3%	0	0	0.0%	1.10%	0.04%	30-39	0.17%	9,80%	58
30-34	22861	3720	87	14	0.4%	1	0	0.0%	1.36%	0.04%	40-49	0.35%	8,99%	26
35-39	19677	3176	108	17	0.5%	1	0	0.0%	1.98%	0.08%	50-59	0.80%	10,19%	13
40-44	19078	3230	157	27	0.8%	2	0	0.0%	3.06%	0.23%	60-69	1.24%	12,56%	10
45-49	19917	3249	242	39	1.2%	6	1	0.0%	4.83%	0.23%	70+	2.81%	16,78%	6
50-54	20408	3064	382	57	1.9%	6	1	0.0%	6.61%	0.99%				
55-59	19199	3034	523	83	2.7%	26	4	0.1%	8.35%	1.41%				
60-64	13638	2623	661	127	4.8%	37	7	0.3%	12.18%	7.50%				
65-69	8764	2025	742	171	8.5%	103	24	1.2%	14.46%	13.60%				
70-74	7725	1922	964	240	12.5%	197	49	2.6%	33.54%	71.96%				
75-79	6672	2066	1144	354	17.1%	357	111	5.4%						
80+	13488	2963	2654	583	19.7%	1889	415	14.0%						
Total	240608	2783	7914	92	3.3%	2625	30	1.1%	99,22%	100,00%	Assumption: 14% of hospitalized COVID-19 sufferers are treated with intensive care (RKI)			

! Cases per 100'000 residents; * Hospitalisations per cases; § Deaths per cases
Source: Federal Health Office (Covid-19 vaccination strategy 24.12.20)

*According to the COVID-19 prognostic consortium's model 0,95% of those tested positive in Austria receive intensive care (Bachner, Rainer, Zuba, Jan 21, 2021)

Interestingly, however, excess mortality in the total population is not overestimated but rather underestimated. When asked about excess mortality for 2020, 25.8% still assume a very high or high excess mortality, but then put the excess mortality at 3872 cases on average (trimmed mean 3699;

113 95% confidence interval 3741 - 4003). In fact, however, mortality in 2020 was 5350 cases above the
 114 expected variation. Mortality in Austria was 83.386 (± 2791 standard deviation) in 2019, and 91.527
 115 in 2020. (Please note that this excess mortality is unadjusted for the increasing proportion of the 65+
 116 age group in the general population over the years.)

117 When evaluated separately by sex and primary TV medium, women (18-69yrs) systematically
 118 overestimated risk more than men, and more so the younger they are (see Table 3).

119

120 *Table 3. Subjectively estimated probability to be admitted to the intensive care unit (ICU) due to*
 121 *Covid-19 (by gender) vs. the objective risk.*

AGE-groups survey	Probability infected AND ICU	Subjective estimate to come to ICU due to Covid-19 (!)		Factor of subjective overestimation of risk	
		Women	Men	Women	Men
18-29	0.24%	12,15%	6,31%	51	26
30-39	0.17%	11,05%	7,59%	65	45
40-49	0.35%	9,96%	6,97%	29	20
50-59	0.80%	10,82%	9,09%	14	11
60-69	1.24%	14,12%	10,29%	11	8
70+	2.81%	14,48%	17,49%	5	6

Assumption: 14% of hospitalized COVID-19 sufferers are treated with intensive care (FKI)
 * According to the COVID-19 prognostic consortium's model 0,95% of those tested positive in Austria receive intensive care (Bachner, Rainer, Zubat, Jan 21, 2021)

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124 Analyzing these estimates separately for the two extreme groups defined above, i.e. primary
 125 consumers of public TV vs. those who regularly consume private TV (but public TV not on a daily
 126 basis), much higher overestimations and risk estimates are found in the group of public TV viewers
 127 [11.8% vs. 7.7% in the youngest group (18-29 years), 19.9% vs. 5.7% in the 70+ group].

128 Using the QCOVID risk calculator from the University of Oxford (UK)
 129 (<https://qccovid.org/Calculation>) the individual severe morbidity (hospitalization) and mortality risk
 130 due to COVID-19 can be calculated even more accurately than shown in the table above (for more
 131 details see 1]. Just to give a few examples for different age groups and medical pre-conditions:

- 132 • 20-year old healthy male: 1:33.333 (0.003%) for severe disease, 1:1.000.000 (0.0001%) for mortality
- 133 • 30-year old healthy female: 1:5.102 (0.021%) for severe disease, 1:200.000 (0.004%) for risk of death
- 134 • 40-year old healthy male: 1:3.300 (0.031%) for severe disease, 1:66.667 (0.002%) for risk of death
- 135 • 50-year old overweight woman (BMI 28) with type II diabetes: 1:960 (0.037%) for severe disease,
 136 1:6.536 (0.003%) for risk of death
- 137 • 60-year old man with COPD: 1:738 (0.091%) for severe disease, 1:4.274 (0.018%) for risk of death.

138 In summary, the risk of dying from Covid-19 for individuals under 65 is extremely low and can be

equated with the risk of having a fatal accident on the daily trip to work by car [3]. In this context we eagerly await that an unemotional discussion of "lockdown" measures - that have been enforced to varying degrees around the world [4] - is not only increasingly enforced in the scientific field but even more so appreciated in the public discussion and politics.

143

144 **Vaccination & Testing Strategy**

145 In terms of willingness to be vaccinated, 42.8% of participants said in February 2021 that they
146 will „definitely“ get vaccinated (4.9% of whom do so because of job requirements), 29.6% „prefer to
147 wait“ or are „still undecided“, and 27.5% will „definitely not“ get vaccinated. Among those who are
148 in favor of vaccination, half (49.5%) say the primary reason for vaccination is "to be able to return to
149 a normal life." „Protecting oneself“ (26.4%) or „others“ (24.1%) is less often cited as the driving
150 factor. The majority of those who oppose vaccination (53.2%) believe that „the side effects of
151 vaccination are not yet well enough known or researched“.

152 According to the Austrian ministry of health (21. July 2021) 65,60% of the “vaccinable” population
153 aged 12+ (5.183.408 people) was vaccinated at least once, and 52,90% fully.

154 In January/February 2021 92.4% of those who already had a PCR (35.84%) or antigen (49,43%) test
155 received a negative test result. 87.9% of those who received a positive test result reported „no“ or
156 „mild symptoms“, and the remaining 12.1% reported severe symptoms without (10.53%) or with
157 hospitalisation (1.58%). In Austria, a test for recovery or SARS-CoV-2 antibodies was only performed
158 by 11.69% by February 19th 2021. The latter is remarkable, as already in December 2020
159 seroprevalence was estimated to be around 20% in the general population [5, 6] and up to 42%
160 following SARS-CoV-2 outbreaks like in Ischgl (Austria; March 2020) [7]. In the Austrian
161 population, seroprevalence was however not widely tested even as phase 3 of the vaccination plan
162 was launched in April and May 2021 with the start of vaccination among the general population.

163

164 **Return to Normality**

165 The fact that (in January/February 2021) 43.2% of the participants do not expect a return to
166 normality until 2022 or even later can be interpreted as an alarming lack of perspective in the general
167 population. Very similar and even more alarming results are found in the infant and adolescent
168 population (aged 6-18) in Austria (cf. <https://osf.io/fxamb/>). The things most likely to help adult
169 participants get through this crisis are „spending time in nature“ (76.4%), „sports and
170 exercise“ (72%), and „meeting relatives or friends in person“ (68.1%).

171 These Austrian data ($n = 3848$), as well as the data from Germany ($n = 3745$) and Switzerland ($n =$

1815), can be accessed and visualized directly at bit.ly/CovidSurvey-DACH. It can be considered a
'work in progress' database where data should be accessible and widely shared with the broad public.
In the following section, the data of 657 University students from Austria (aged 18-39 years) were
evaluated separately in order to better understand their perspective on the pandemic and the potential
stress and burden they experienced as also their daily life changed dramatically with now 3 semesters
being abandoned in-presence, and practically all the teaching being shifted to a digital format.

178

179 **Spotlight on University Students in Austria**

180 In a special evaluation for students of the study "Knowledge and Attitudes Towards Corona",
181 the data of a total of 657 students from Austria were analyzed (67.0 female, 32.1% male, 0.9%
182 diverse). This survey closed May 9th 2021. Of these, 85.1% were in the 18-29 age group and 14.9%
183 in the 30-39 group.

184 90.1% of students in Austria feel „very“ (61.5%) or at least „somewhat“ (28.6%) restricted by the
185 Corona-related measures. A very large number of students share these concerns/displeasure in private
186 with friends or family „regularly“ or „several times“ (76.5%) However, only 10.1% also engage
187 publicly by posting in forums, participating in demonstrations, or taking legal action. About a quarter
188 of participants (23%) were bothered „all the time“ or „most of the time“ by feelings of anger and
189 unease due to the impression of non-objective reports.

190 45.9% of students feel „very“ (9.9%) or „somewhat“ (36.0%) threatened by the coronavirus
191 pandemic. In comparison, many more namely 55.7% of German students in the survey ($n = 158$) say
192 they feel „very“ (26.6%) or „somewhat“ (29.1%) threatened by the corona pandemic.

193 The greatest fears perceived by students in the pandemic are 1) that a close relative could get infected
194 (76.2%) 2) the long-term physical consequences (48.6%) and 3) the psychological damage (44.6%)
195 expected. On the other hand, the fear of actually dying from Corona was least frequently mentioned
196 (12.8%).

197 What causes the students most stress is 1) not being able to maintain social contacts (52.4% not being
198 able to meet friends, 44.3% not being able to meet relatives), 2) the economic consequences (31.7%)
199 and 3) the fear that a close relative may get infected (30.1%). Only 3.8% said they were concerned
200 about getting sick themselves.

201 Regarding the willingness to be vaccinated, 43.2% of the student population stated that they will
202 „definitely“ get vaccinated, 36.2% would „like to wait“ or are „still undecided“, and 14.9% will
203 „definitely not“ get vaccinated. Compared to German students, the willingness to get vaccinated is

204 significantly higher among Austrian students. According to the survey, only 24.7% of German
205 students will „definitely“ get vaccinated and 43.7% will „definitely not“ get vaccinated. However, it
206 should be critically noted that the German student sample is probably too small in order to allow a
207 reliable interpretation of this intercultural difference to date.

208 Among those in favor of vaccination, almost half of the students (49.2%) say that the primary reason
209 for vaccination is “to be able to return to a normal life” and 34.8% are in favor of vaccination „to
210 protect others“. Wanting to protect themselves from a Covid-19 disease is cited by only 16% as the
211 driving factor for a SARS-CoV-2 vaccination.

212 For the majority of those who oppose vaccination (63.1%) the main reason is „that the side effects of
213 vaccination are not well known or investigated enough“.

214 90.1% of those who already had a PCR or antigen test received a negative test result. 85.1% of those
215 who received a positive test result reported „no“ or „mild symptoms“, and the remaining 14.9%
216 reported “severe symptoms“. A test for SARS-CoV-2 recovery or already existing antibodies has been
217 performed by only 10.5% of the Austrian and 10.8% of the German students by May 2021.

218 Also a big part of the student population expects a return to normality only in 2022 or even later
219 (41.7%). Last but not least, students were asked what will best help them through the Corona crisis.
220 They answer in the first 3 priorities with: 1) „meeting friends and loved ones in person“ (67%), 2)
221 „enjoying time in nature“ (66%) and 3) „sports and exercise“ (62%).

222

223 **Conclusion**

224 Altogether the results of this big (online) survey in German-speaking countries (here with a
225 focus on Austria) reflects the high degree of the psychological burden and anxiety regarding SARS-
226 CoV-2 in the general population. The subjectively estimated threat of the disease (hospitalisation or
227 mortality) is vastly overestimated and contributes to the degree of psychosocial burdens in the
228 Austrian population. As such, psychosocial effects are also known to have long-term consequences
229 on the immune system and general health, it is highly advisable to quickly return to an objective
230 discussion of real risks and establish countermeasures to ease the psychosocial burden for those in
231 need of support. The aftermath of the pandemic is just beginning and the public focus should finally
232 be turned to those indirectly harmed by the coronavirus measures in order to prevent a meltdown of
233 well-being and general somatic as well as mental health in the general population.

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