

# Students in COVID-19 pandemic 2020: Motivation, experience and meaning for medical students – Results of questionnaire survey

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## Background

In the current situation of the COVID-19 pandemic, medical students across Germany have been recruited to support medical care professionals in hospitals and nursing homes.

We aimed to analyze their **motivations to help** and relate these to their compassion with others, stress perception and experiences of wondering awe and gratitude.

## Methods

Cross sectional survey with standardized questionnaires (i.e. PSS, CDI, GrAw-7, MTHQ) among medical students from May 29 to June 18, 2020. A positive vote of the ethical commission of Witten/Herdecke University was received in May 2020 (#106/2020)

## Results

### Participants:

Among 979 participating students, 75% proceeded with the online survey and 25% provided basic demographic data only (non-completer). Both groups did not significantly differ.

Among the completer, 52% were working as volunteers during the pandemic in different medical areas (i.e., 33% ICU, 16% infection ward, 16% emergency unit, 16% 'normal' units at hospital). 37% would have liked to work, but did not get an employment, and 21% did not intend to voluntarily support the hospital staff. 52% had contact to COVID-19 infected persons.

### Stress perception:

During their employment work, students' time pressure, physical and mental burden was scoring quite low, while their general stress perception was in the moderate level. Cool down perception were thus low, too (Table 1). Stress was perceived stronger by women, and they scored significantly higher on compassion and Awe/Gratitude than men (Table 2).

### Motivations to help:

Students' motivation to help (as measured with the 12 item *Motivations to Help Scale* (MTHQ) was categorized as 1) *Altruistic intentions* (which scored highest), followed by *Practical Application / Increase of Knowledge*, and *Role Testing / Recognition* which scored lowest.

There were differences related to gender, voluntary employment and perception of Awe/Gratitude as an indicator of perceptive spirituality (Table 2).

### Correlation analyses:

Motivations to help were not at all or marginally (inversely) only related with indicators of stress / burden (Table 3).

*Altruistic Intentions* were moderately positively related to compassion (which is weakly related to Awe/Gratitude). *Practical Application / Increase of Knowledge* was weakly related to Awe/Gratitude. *Role Testing / Recognition* was marginally only related with Compassion and Awe/Gratitude

**Table 1:** Characterization of participants

	N	% of responders / mean ± SD [range]
<b>Gender (%)</b>	731	100
Women	538	74
Men	188	26
Mean age (years)	726	24 ± 4 [18-48]
<b>Employment as volunteer (%)</b>	728	100
Were / are currently employed	381	52
Currently not employed	347	48
<b>No Employment as volunteer (%)</b>	347	100
No interest to be employed	111	36
No Employment as volunteer (%)	347	100
Have interest but was not employed	183	58
<b>Felt under pressure during employment</b>		
Time pressure	381	1.5 ± 1.1 [0-4]
Physical burden	380	1.6 ± 1.2 [0-4]
Mental burden	380	1.4 ± 1.2 [0-4]
<b>General attitudes and behaviors</b>		
Stress perception (PSS)	669	18.1 ± 7.6 [0-39]
Cool Down (CDI)	632	9.0 ± 7.3 [0-45]
Compassion (SCBCS)	656	1.8 ± 0.5 [0-3]

**Table 2:** Analyses of variance (ANOVA)

		Motivation to Help (MTHS)			Stress perception (PSS)	Compassion (SCBCS)	Awe / Gratitude (GrAw-7)
		Altruistic Intention	Practical Application / Increase of Knowledge	Role Testing / Recognition			
<b>All students</b>	M	5.6	5.1	3.5	18.0	1.8	57.1
	SD	1.4	1.5	1.4	7.6	0.5	18.3
<b>Voluntary employment</b>							
Yes	M	5.9	5.3	3.6	17.3	1.8	56.8
	SD	1.1	1.4	1.3	7.2	0.5	18.4
No	M	5.3	4.8	3.5	18.8	1.9	57.5
	SD	1.6	1.5	1.4	8.0	0.5	18.1
F-value		<b>40.2</b>	<b>16.7</b>	1.2	6.5	1.1	0.2
p value		<b>&lt;.0001</b>	<b>&lt;.0001</b>	n.s.	.011	n.s.	n.s.
<b>Gender</b>							
Women	M	5.7	5.0	3.6	18.9	1.9	58.4
	SD	1.4	1.4	1.4	7.5	0.5	18.0
Men	M	5.4	5.1	3.4	15.6	1.6	53.5
	SD	1.4	1.5	1.3	7.5	0.5	18.5
F-value		<b>8.9</b>	0.1	2.8	<b>24.0</b>	<b>75.7</b>	<b>9.4</b>
p value		<b>.003</b>	n.s.	n.s.	<b>&lt;.0001</b>	<b>&lt;.0001</b>	<b>.002</b>
<b>Awe/Gratitude</b>							
Low (<39)	M	5.3	4.5	3.1	19.5	1.7	29.7
	SD	1.5	1.5	1.3	8.3	0.5	10.0
Moderate (39-75)	M	5.7	5.1	3.6	17.9	1.8	56.8
	SD	1.3	1.4	1.3	7.4	0.5	9.0
High (>75)	M	5.9	5.5	3.7	17.2	2.1	83.4
	SD	1.3	1.41	1.4	7.7	0.6	8.1
F-value		4.5	<b>13.0</b>	<b>9.1</b>	3.0	<b>22.4</b>	<b>1023.4</b>
p value		.012	<b>&lt;.0001</b>	<b>&lt;.0001</b>	n.s.	<b>&lt;.0001</b>	<b>&lt;.0001</b>

**Table 2:** Correlation analyses (\*\*p<0.001; Spearman rho)

	Altruistic Intention	Practical Application / Increase of Knowledge	Role Testing / Recognition	Stress perception (PSS)	Compassion (SCBCS)	Awe / Gratitude (GrAw-7)
<b>Motivations to Help</b>						
Altruistic Intention	1.000					
Practical Application / Increase Knowledge	<b>.342**</b>	1.000				
Role Testing / Recognition	<b>.371**</b>	<b>.444**</b>	1.000			
<b>Stress / Burden Indicators</b>						
Time pressure	.086	-.039	-.022	.189**	.026	-.069
Physical burden	.053	.057	-.040	.211**	.090	-.023
Mental burden	.095	.036	.027	<b>.306**</b>	.126	-.038
Stress perception	-.026	-.170**	.005	1.000	.178**	-.122**
Cool Down (CDI)	-.117**	-.118**	.033	<b>.396**</b>	.049	-.096
<b>Compassion / Awe</b>						
Compassion (SCBCS)	<b>.321**</b>	.090	.147**	.178**	1.000	
Awe/Gratitude (GrAw-7)	.161**	.204**	.158**	-.122**	.268**	1.000

## Conclusions

- Medical students' intention to support health care professionals during the COVID-19 pandemic was mostly **altruistic motivated**, and they further took the chance to **practically apply their current knowledge** and to **improve their skills and competences**.
  - This may have consequences for their medical education and future work as competent and compassionate physicians.
- Students who decided against a voluntary employment in hospital are **not** less compassionate, but seem to be more stressed and in fear than their helping counterparts.
  - Nevertheless, their altruistic intentions were significantly lower.