MENTAL HEALTH OF GERMAN UAS HERON 1 DRONE PERSONNEL
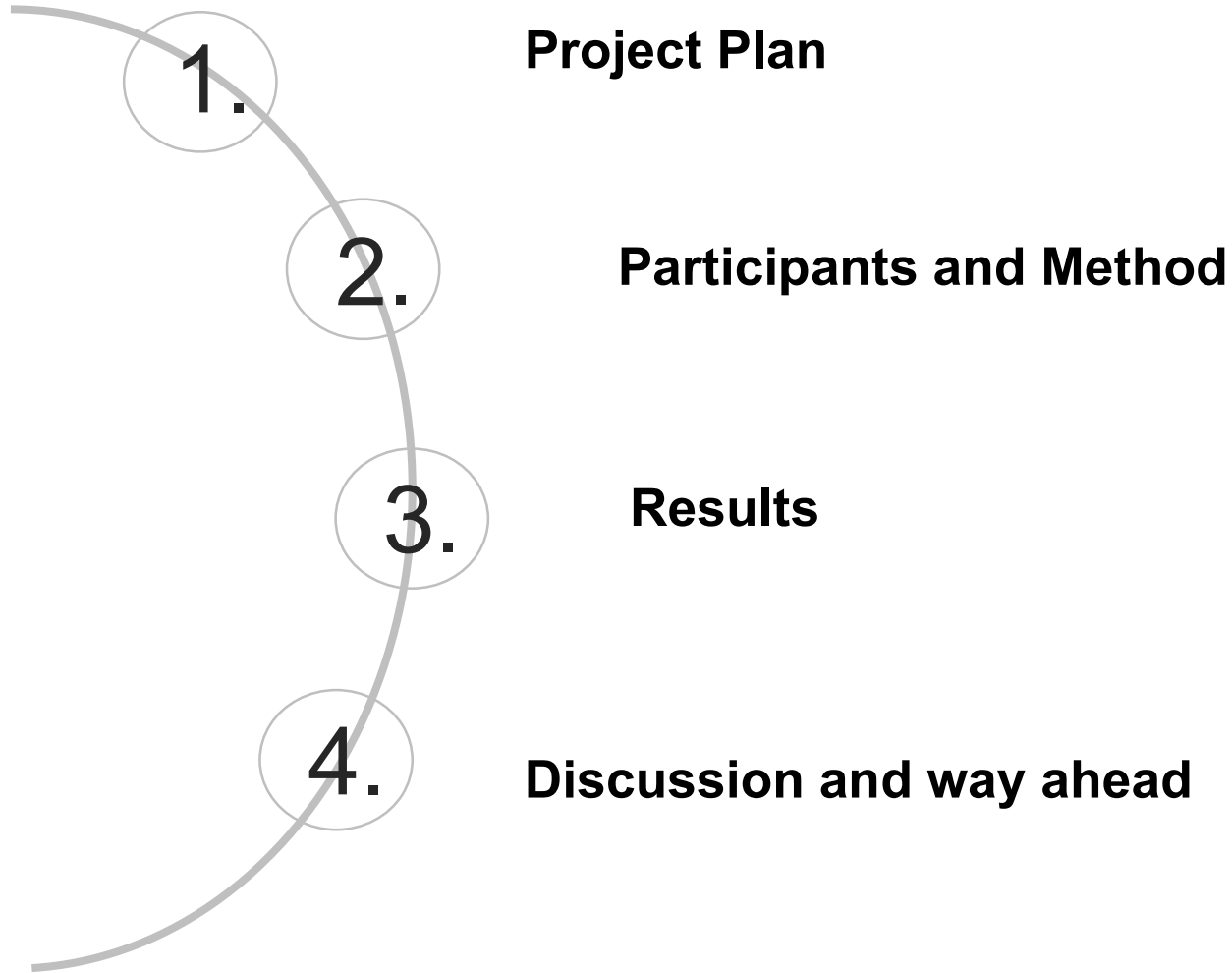
Air Force Centre of Aerospace Medicine

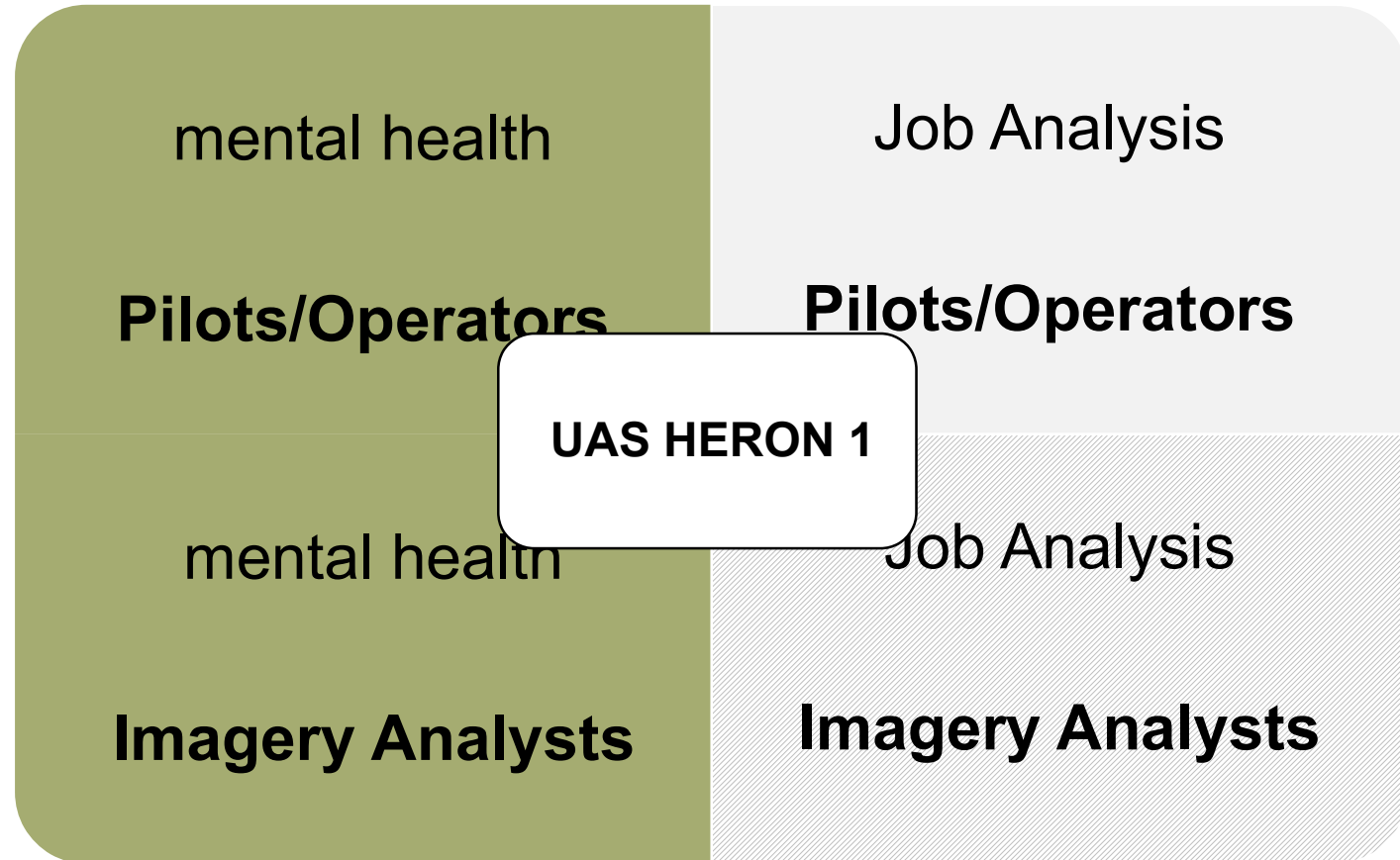BUNDESWEHR

STRRUCTURE

1. **Project Plan**

2. **Participants and Method**

3. **Results**

4. **Discussion and way ahead**

Project Plan

| mental health	Job Analysis
Pilots/Operators	**Pilots/Operators**
mental health	Job Analysis
Imagery Analysts	**Imagery Analysts**

UAS HERON 1

Participants and Method

4 Participants were deployed

117 generally participated in a deployment

1 participant in psychotherapy

11 successfully completed psychotherapy in their life

Age pattern of the sample

Others 2%

Pilot 24%

TacOP 26%
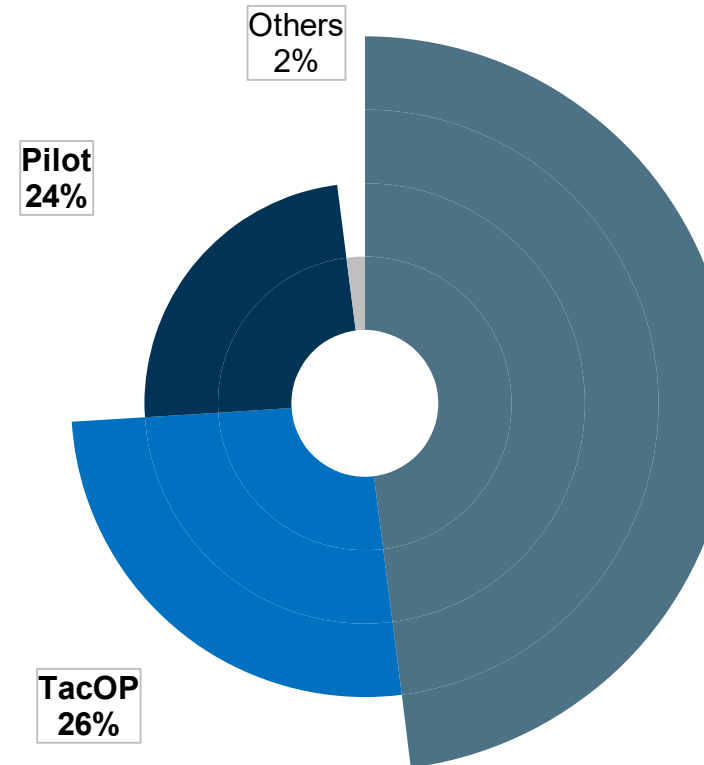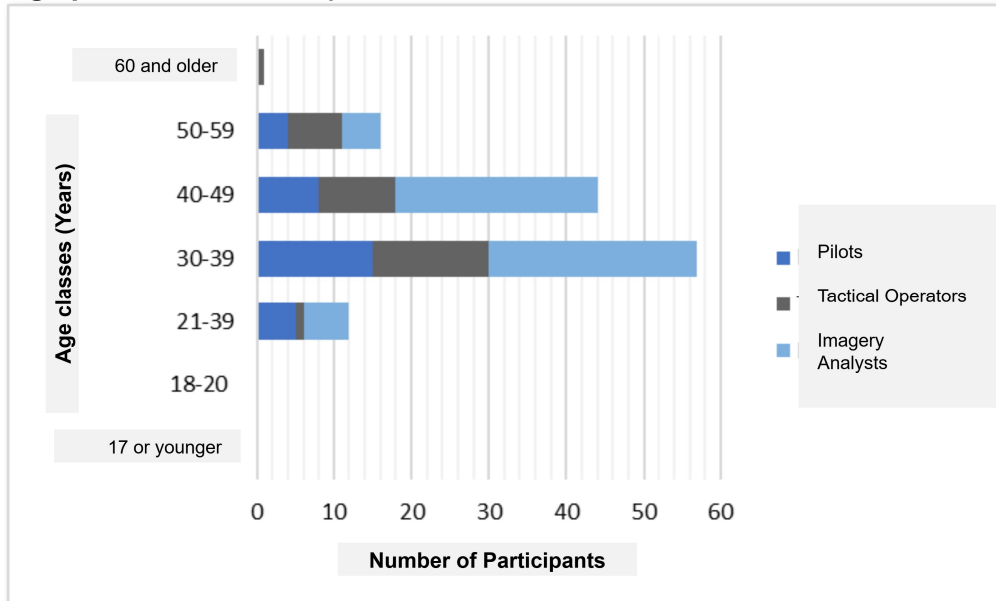
N=131 → n=125

Response rate: 41%

Sample distribution on gender, status und job experience (absolute figures)

Legend: Pilot / TacOP / ImA

Gender: Men — ImA 55, TacOP 33, Pilot 32; Women — 1, 9

Status: regular — ImA 38, TacOP 7, Pilot 6; professional — ImA 26, TacOP 27, Pilot 26

Job experience: < 1 year — 2, 3, 1; 1 – 3 Years — ImA 11, TacOP 8, Pilot 8

Empirical Cross section study

Constructs

Somatoform Syndrome

Psychosocial stress

PHQ-D (Löwe, Zipfel & He...

Depression

Panic/Anxiety disorders

Substance related misuse

AUDIT (Barbor et al., 200...

PTSD

PCL (Ehring et al., 2014)

Adjustment disorder

ADNM-8 (Kazlauskas et a...

Moral Injury

MI (Hellenthal et al., 2017)

Evaluation

Quantitative - Statistics using R and Excel

Qualitative - Qualitative content analysis (Mayring, 20...

Results

SOMATOFORM SYNDROME

Questionnaire: PHQ-D (Löwe, Zipfel & Herzog, 2002)

Total (n=125):

M	SD	Min	Max
3.91	3.17	0	13

Scale value:

- 0-4: minimal
- 5-9: low
- 10-14: medium
- ab 15: high

Mean positive correl
psychosocial stress,
r(129)=.30, p<.001.

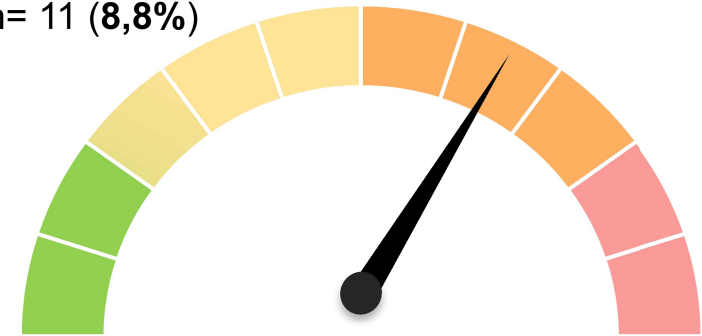**Life time prevalence: 12,9%** (Meyer et al., 2000)

low

n= 33 (**26,4%**)

44 noteworthy participants
(n= 35,2%)

medium

n= 11 (**8,8%**)

- **Pilot:** 5
- **TacOp:** 7
- **ImA:** 21

- **P
- **Ta
- **In

Significant group difference (Chi-Quadrat(2)=11.95, *p*=0.003) Post-hoc: significant difference between pilots and ImA.

PSYCHOSOCIAL STRESS

Questionnaire: PHQ-D (Löwe, Zipfel & Herzog, 2002)

Scale value: 20

- **0-4:** minimal
- **5-9:** low
- **10-14:** medium
- **ab 15:** high

Total (n=130):

M	SD	Min	Max
10.18	3.16	0	18

- Mean positive correlation with depression, r(129)=.44, p<.001
- Mean positive correlation with substance abuse, r(129)=.39,
- High positive correlation with adjustment disorder, r(129)=.65
- Mean positive correlation with PTSD, r(129)=.41, p<.001.

minimal

n= 5 (**3,8%**)

- **Pilot:** 0
- **TacOp:** 2
- **AlmA:** 3

low

n= 46 (35,4**%**)

- **Pilot:** 11
- **TacOp:** 15
- **AlmA:** 20

medium

n= 71 (54,6**%**)

- **Pilot:** 20
- **TacOp:** 15
- **AlmA:** 36

high

n= 8 (6,
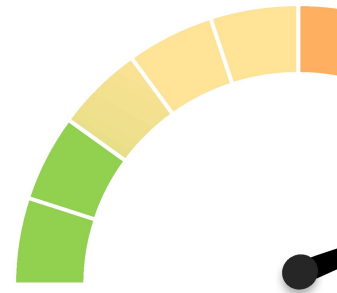
- **Pilot:**
- **TacOp:**
- **AlmA:**

PANIC & OTHER ANXIETY DISORDERS

Questionnaire: PHQ-D (Löwe, Zipfel & Herzog, 2002)

Scale value:

→ Within the scales certain scores within the scales had to be met to indicate an anomaly

Total (n=125)

Life time prevalence: 2,4% (Spiegelhalder & Riemann, 2020)

Life time prevalence: 10,6% (Wancata, Freidl & F...

Panic disorder:
2 participants (1 Pilot, 1 TacOp; **1,6%**) noteworthy

other anxiety disorders:
22 participants (2 Pilots, 5 TacOps, 15 ImA; **17,6%**) no...

Group difference for anxiety syndrome significant (Chi-Quadrat (2)=8.09, p=0.01); Post-hoc: Significant difference between pilots and ImA...

DEPRESSION

Questionnaire: PHQ-D; PHQ-9 (Löwe, Zipfel & Herzog, 2002)

Total (n=125):

M	SD	Min	Max
3.43	3.17	0	14

Scale value :

>5:   inconspicuous
5-10:   low
10-14: medium
15-19: distinctive
ab 20: high

Life time prevalence: 16 - 20% (S3-Leitlinie Depression, 2015)

37 noteworthy participants
(n= 29,6%)

low
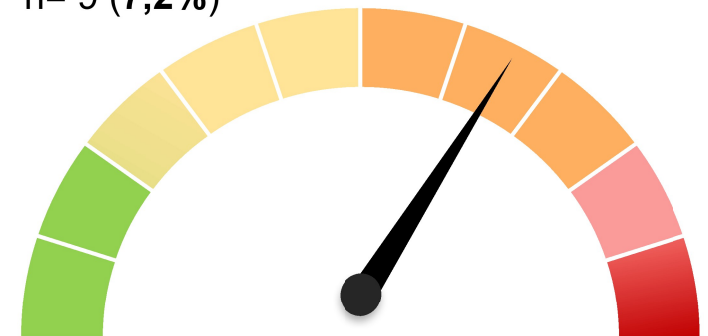
n= 28 (**22,4%**)

- **Pilot:**   5
- **TacOP:** 3
- **ImA:**   20

medium

n= 9 (**7,2%**)

Significant group difference (Chi-Quadrat (2)= 8.11, *p*=0.02); Post-hoc: Significant difference between Pilots and AImA.

Questionnaire: AUDIT (Wetterling & Veltrup, 1997)

Total (n=125):

M	SD	Min	
4.69	4.22	0	

Scale value:

- from 8 on there is a suspicion of a harmful use
- The higher the value, the higher the probability

Life time prevalence:
- abuse 15%   (Laux & Möller, 2011)

> 8

n= 23 (**18,4%**)

23 noteworthy participants
(n= 18,4%)

>

n= 4 (**3,2%**)

- **Pilot:** 4
- **TacOP:** 9
- **ImA:** 10

- P
- T
- I

No significant group differences (Chi-Quadrat (2)= 0.78, *p*= >0.05)

Questionnaire: Experimental Scale (Hellenthal et al., 2017)

Total (n=125):

1. Scale (total)

M	SD	Min	Max
39.34	17.5	0	54

2. Scale (total): Pilots

M	SD	Min	Max
41.19	13.06	0	54

3. Scale (total): TacOps

M	SD	Min	Max
43.26	12.66	0	54

4. Scale (total): AlmA

M	SD	Min	Max
36.94	20.59	0	54

No significant group difference (Chi-Quadrat (2)= 0.59, *p*= >0.05

Questionnaire: ADNM-8 (Kazlauskas et al., 2018)

Total (n=125):

M	SD	Min	Max
11.81	4.82	0	26

Scale values:

- > 18 noteworthy

12-month prevalence: 0,9% (Maercker et al., 2012)

>

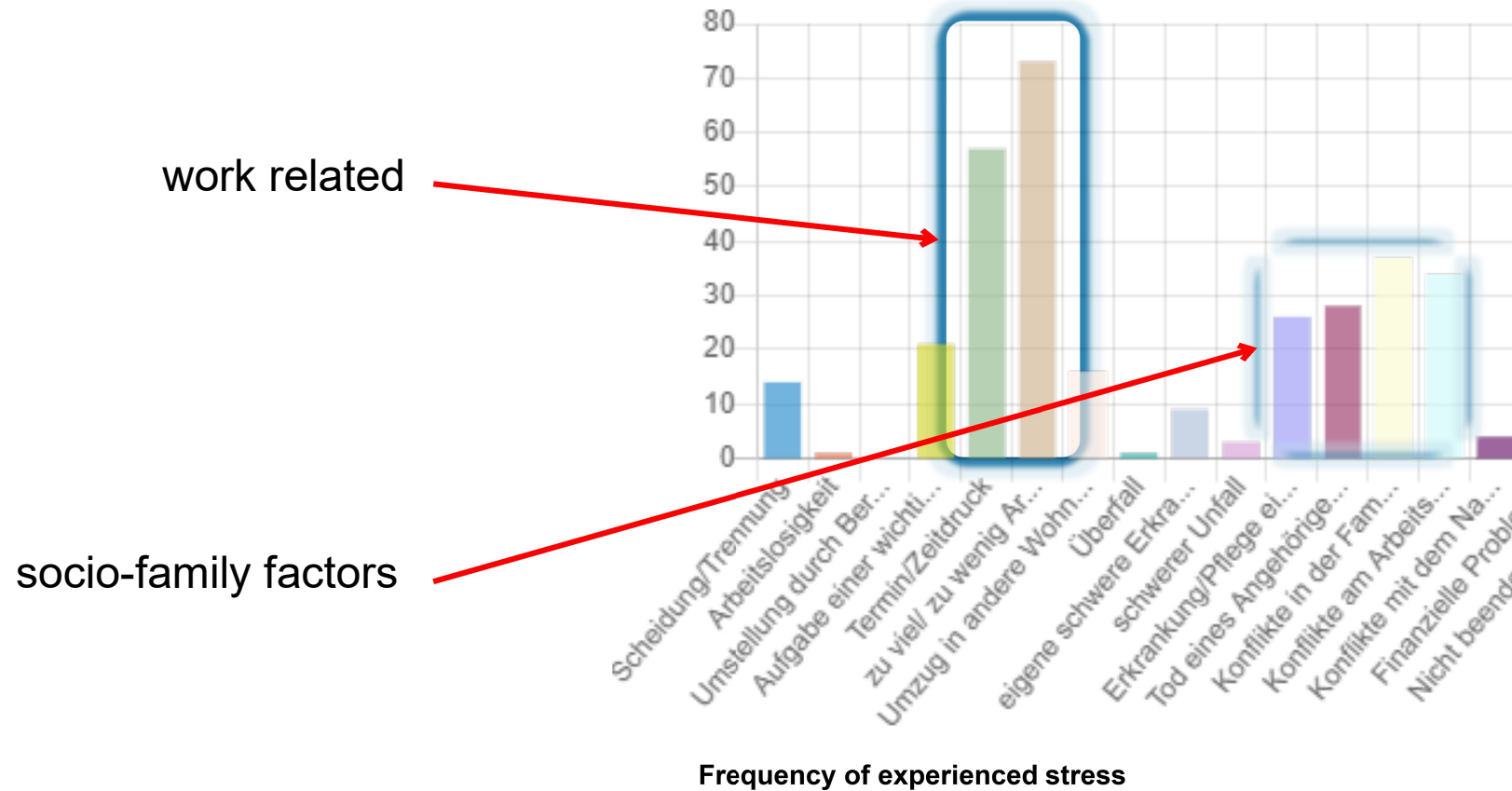n= 15 (**12%**)

- **Pilot:** 3
- **TacOP:** 2
- **ImA:** 10

No significant group difference (Chi-Quadrat (2)= 0.44, *p*= >0.05

Strong positive correlation with Psycho-social stress, r(12

ADJUSTMENT DISORDER

Questionnaire: ADNM-8 (Kazlauskas et al., 2018)

work related

socio-family factors

Frequency of experienced stress

ADJUSTMENT DISORDER

- Qualitative content analysis (Mayring, 2015)

Separation/Divorce 15,4%	Illness family members/friends 14,9%	Death family members/friends 14,4%	Death comrade 5,5%	own 1
Conflicts family 20,4%	Conflicts work related 19,9%	Dissatisfaction workplace/function 27,9%	Problems with mission related coping 19,9%	Financial 5
	No answer ca. 46%	No stress 13,9%	Others 4,0%	

- Interrater-Reliablity: 85% (Krippendorff's α= 0.85)

POSTTRAUMATIC STRESS DISORDER

Questionnaire: PCL-5 (Ehring, Knaevelsrud, Krüger & Schäfer, 2014)

Total (n=125):

M	SD	Min	Max
5.25	7.46	0	44

Scale values:

- \> noteworthy

1-Month prevalence (mil): 1-3% (Frommberger et al., 2014)

\>

n= 3 (**2,4%**)

- **Pilot:** 1
- **TacOP:** 0
- **AlmA:** 2

No significant group difference (Chi-Quadrat (2)= 0.62, *p*= >0.05

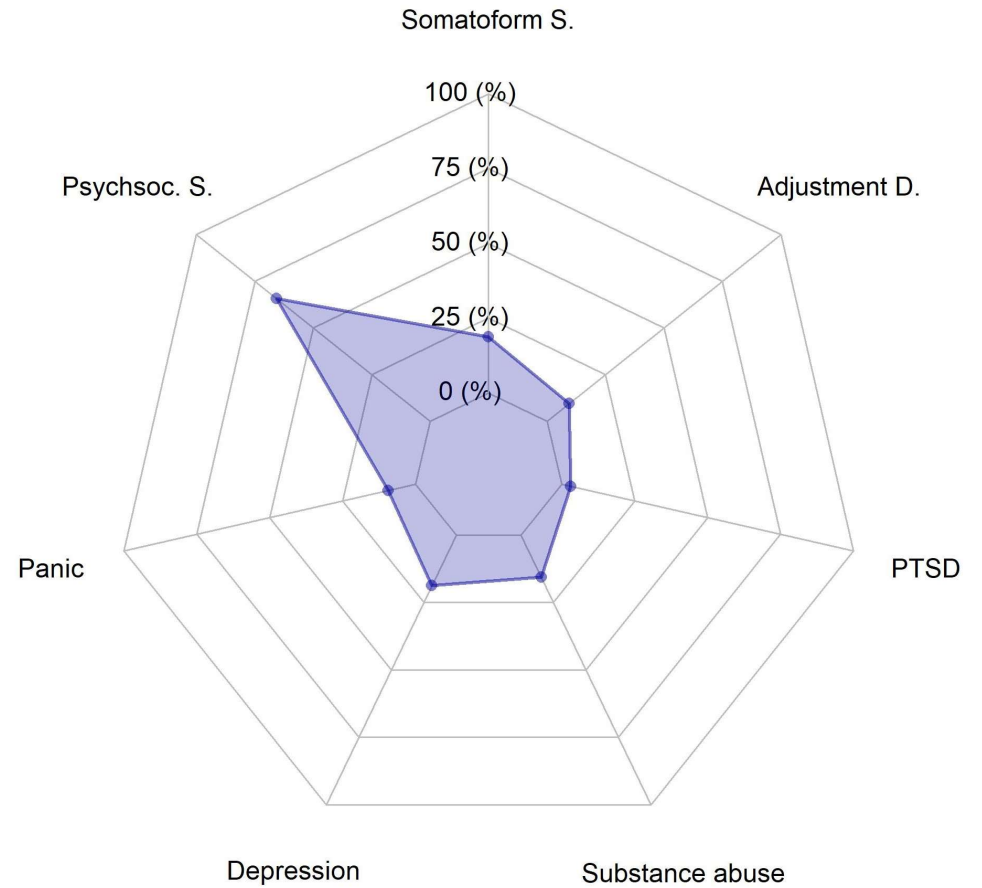Mean positive correlation with Psycho-social stress, r(129)

CLUSTER

Pilot

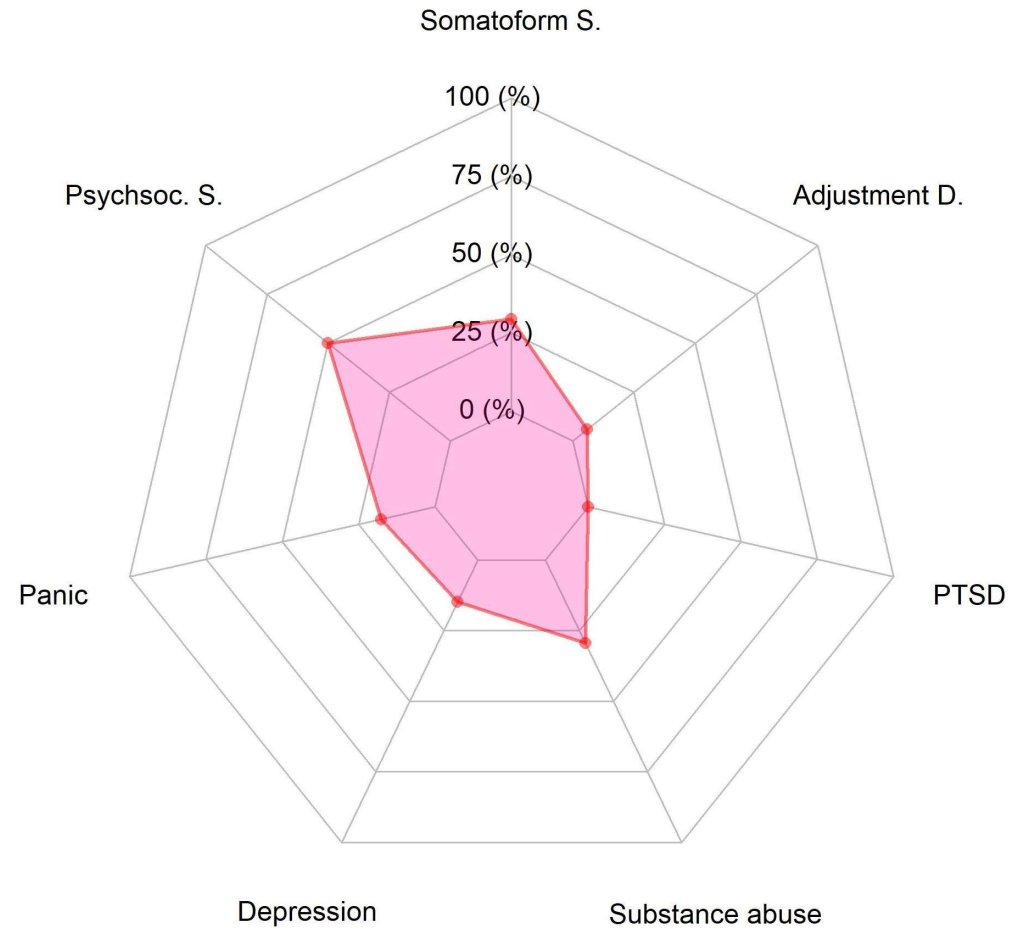The number of noteworthy participants in the total sample (n=32) with regard to the examined constructs.

Somatoform S.

100 (%)

75 (%)

50 (%)

25 (%)

0 (%)

Psychsoc. S.

Adjustment D.

Panic

PTSD

Depression

Substance abuse

CLUSTER

TacOp

The number of noteworthy participants in the total sample (n=34) with regard to the examined constructs.

CLUSTER

ImA

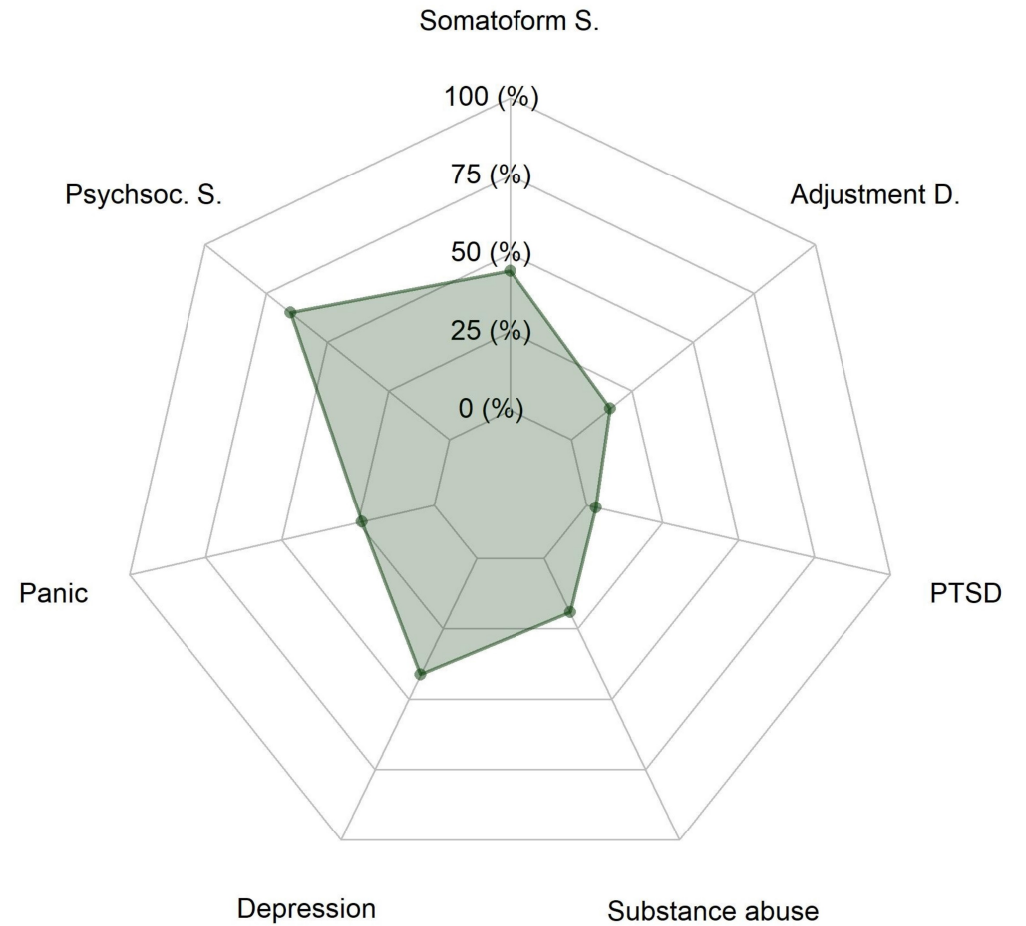The number of noteworthy participants in the total sample (n=63) with regard to the examined constructs.

Discussion and way ahead

▪ **Limitations**

- It is not possible to establish a correlation between specific levels of stress and strain and military tasks from the results of the study.

    → **Development of further valid methods through medical and psychosocial**

- Missing specific military comparison groups cannot be used as control samples

    → **further studies with suitable comparison groups within the German armed necessary**

- The analysis method in the context of moral injury is not yet sufficiently valid

    → **cooperation with BwKrhs Berlin Psychotrauma Centre (PTC)**

Final results

- The sample of pilots, operators, and imagery analysts studied shows significantly in[c] levels of psychological stress and strain, with imagery analysts being the most affec[t]

- A correlation between stress, strain, and workplace-related causes cannot be postul[ated] although the free text analysis shows tendencies for several indicators:

  - Psychosocial and Socio-familiar factors (separation/divorce, illness, and death i[n] job related settings, conflicts, financial problems, health)

  - Job-related factors (dissatisfaction with the job or the function (27,9%), conflicts of mission-related coping (19,9%)

Thank you for your attention!