

Original article. Scand J Work Environ Health. 2016;42(6):547–556. doi:10.5271/sjweh.3595

Farmers' mental health: A longitudinal sibling comparison – the HUNT study, Norway ¹

by Magnhild Oust Torske, DVM,² Johan Håkon Bjørngaard, PhD, Bjørn Hilt, MD, David Glasscock, PhD, Steinar Krokstad, PhD

- 1
- Supplementary tables
- 2
- Correspondence to: Magnhild Oust Torske, HUNT Research Centre, Department of Public Health and General Practice, Faculty of Medicine, the Norwegian University of Science and Technology (NTNU), Forskningsvegen 2, 7600 Levanger, Norway. [E-mail: magnhild.o.torske@ntnu.no].

Supplementary Table 1
Comparison of the occupation classification systems used in the three waves of the Nord-Trøndelag Health Study (HUNT) and in the present study
HUNT1 (1984 - 1986), HUNT2 (1995 - 1997) and HUNT3 (2006 - 2008)

Classification of occupation in HUNT1	Classification of occupation in HUNT2	Classification of occupation in HUNT3 a	Classification in the present study
Management position in public or private enterprise	Management position in public or private enterprise	1000-1999: Legislators, senior officials and managers	Higher grade professionals
Self-employed professional (e.g., dentist, lawyer)	Self-employed professional (e.g., dentist, lawyer)	2000-2999: Academia	and managers
Lower professional occupation (e.g., nurse, technician, teacher)	Lower professional occupation (e.g., nurse, technician, teacher)	3000-3999: Occupation with shorter education from college/university	Lower grade professionals
Non-professional occupation (shop, office, public service)	Nonprofessional occupation (shop, office, public service)	4000-4999:Office/service occupation 5000-5999: Sales/service/care occupation	Routine nonmanual workers
Farmer or forest owner	Farmer or forest owner	Selected occupations in farming, forestry, fisheries (6000-6999): 6111: Field crop and vegetable growers 6121: Dairy and livestock producers 6122: Poultry producers 6129: Animal producers and related workers not elsewhere classified 6130: Crop and animal producers 6210: Forestry workers, etc. Farmers - manually classified	Farmers and forest owners/forestry workers
Other self-employed	Other self-employed	.	Other self-employed
Skilled worker, artisan, foreman	Skilled worker, artisan, foreman	6000-6999: Remaining occupations, excluding farmers and forestry workers	Skilled manual workers
Fisherman	Driver, chauffeur Fisherman	7000-7999: Trade/craft occupation 8000-8999: Machine operator/transport worker	
Semi-skilled, unskilled worker	Semi-skilled, unskilled worker	9000-9999: Occupation that does not require education	Unskilled manual workers

a The four-digit numbers are the STYRK codes (Standard Yrkesklassifisering, Standard Classification of Occupations) used in HUNT3

Supplementary Table 2. Symptoms of psychological distress, anxiety and depression caseness in farmers compared to their siblings working in other occupations - siblings divided by occupational group.
The Nord-Trøndelag Health Study - HUNT1 (1984 - 1986), HUNT2 (1995 - 1997) and HUNT3 (2006 - 2008).

	High level of psychological distress				Symptoms of anxiety caseness				Symptoms of depression caseness			
	HUNT1		HUNT2		HUNT2		HUNT3		HUNT2		HUNT3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Farmers	1	.	1	.	1	.	1	.	1	.	1	.
Higher grade professionals	0.78	0.45-1.34	0.91	0.52-1.58	0.65	0.42-1.02	0.45	0.24-0.84	0.62	0.38-1.00	0.48	0.25-0.91
Lower grade professionals	0.83	0.56-1.24	0.58	0.41-0.84	0.67	0.50-0.91	0.56	0.37-0.84	0.71	0.50-1.02	0.37	0.23-0.61
Routine nonmanual workers	0.83	0.61-1.12	0.99	0.74-1.33	1.04	0.82-1.32	0.96	0.70-1.31	0.73	0.56-0.96	0.69	0.48-1.00
Other self-employed	0.80	0.51-1.27	0.68	0.39-1.18	0.94	0.62-1.42	1.32	0.69-2.49	0.82	0.53-1.27	1.15	0.63-2.09
Skilled manual workers	0.72	0.49-1.07	1.16	0.81-1.65	0.95	0.72-1.25	0.56	0.36-0.87	0.74	0.54-1.01	0.60	0.40-0.91
Unskilled manual workers	1.34	1.01-1.78	1.37	1.00-1.86	1.22	0.94-1.57	0.91	0.65-1.27	0.72	0.54-0.96	0.91	0.62-1.33

Psychological distress:

HUNT1: Number of observations: 1724. Number of groups: 594

Average number of observations per group: 2.9

HUNT2: Number of observations: 1723. Number of groups: 608

Average number of observations per group: 2.8

Anxiety caseness:

HUNT2: Number of observations: 2577 . Number of groups: 880

Average number of observations per group: 2.9

HUNT3: Number of observations: 1419. Number of groups: 524

Average number of observations per group: 2.7

Depression caseness:

HUNT2: Number of observations: 2099. Number of groups: 703

Average number of observations per group: 3.0

HUNT3: Number of observations: 1145. Number of groups: 425

Average number of observations per group: 2.7

Adjusted for sex, age and birth order

High level of psychological distress = top decile of the Anxiety and Depression Index (ADI)

Symptoms of anxiety caseness = score ≥ 8 on the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS)

Symptoms of depression caseness = score ≥ 8 on the anxiety subscale of the HADS

OR = odds ratio; 95% CI = 95% confidence interval

Supplementary Table 3. Psychological distress, anxiety and depression caseness in farmers compared to their siblings working in other occupations - full siblings only
The Nord-Trøndelag Health Study - HUNT1 (1984 - 1986), HUNT2 (1995 - 1997) and HUNT3 (2006 - 2008).

	High level of psychological distress				Symptoms of anxiety caseness				Symptoms of depression caseness			
	HUNT1		HUNT2		HUNT2		HUNT3		HUNT2		HUNT3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Farmers	1	.	1	.	1	.	1	.	1	.	1	.
Siblings	0.90	0.73-1.09	0.98	0.79-1.20	0.98	0.83-1.15	0.82	0.64-1.04	0.67	0.56-0.81	0.70	0.54-0.90

Psychological distress: *HUNT1: Number of observations: 1564. Number of groups: 538*
 Average number of observations per group: 2.9

HUNT2: Number of observations: 1552. Number of groups: 547
Average number of observations per group: 2.8

Anxiety caseness: *HUNT2: Number of observations: 2331. Number of groups: 793*
 Average number of observations per group: 2.9.

HUNT3: Number of observations: 1235. Number of groups: 452
Average number of observations per group: 2.7

Depression caseness: *HUNT2: Number of observations: 1868. Number of groups: 622*
 Average number of observations per group: 3.0

HUNT3: Number of observations: 1014. Number of groups: 371
Average number of observations per group: 2.7

Adjusted for sex, age, education and birth order

High level of psychological distress = top decile of the Anxiety and Depression Index (ADI)

Symptoms of anxiety caseness = score ≥ 8 on the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS)

Symptoms of depression caseness = score ≥ 8 on the anxiety subscale of the HADS

OR = odds ratio; 95% CI = 95% confidence interval

Supplementary Table 4. Psychological distress, anxiety and depression caseness in farmers compared to their siblings working in other occupations - siblings maximum 10 years apart in age The Nord-Trøndelag Health Study - HUNT1 (1984 - 1986), HUNT2 (1995 - 1997) and HUNT3 (2006 - 2008).

	High level of psychological distress				Symptoms of anxiety caseness				Symptoms of depression caseness			
	HUNT1		HUNT2		HUNT2		HUNT3		HUNT2		HUNT3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Farmers	1	.	1	.	1	.	1	.	1	.	1	.
Siblings	1.04	0.81-1.32	0.94	0.73-1.21	1.01	0.82-1.24	0.72	0.54-0.96	0.67	0.54-0.84	0.66	0.49-0.89

Psychological distress: *HUNT1: Number of observations: 916. Number of groups: 363*
 Average number of observations per group: 2.5
 HUNT2: Number of observations: 982. Number of groups: 388
 Average number of observations per group: 2.5

Anxiety caseness: *HUNT2: Number of observations: 1470. Number of groups: 576*
 Average number of observations per group: 2.6.
 HUNT3: Number of observations: 813. Number of groups: 336
 Average number of observations per group: 2.4

Depression caseness: *HUNT2: Number of observations: 1161. Number of groups: 444*
 Average number of observations per group: 2.6.
 HUNT3: Number of observations: 700. Number of groups: 284
 Average number of observations per group: 2.5

Adjusted for sex, age, education and birth order

High level of psychological distress = top decile of the Anxiety and Depression Index (ADI)

Symptoms of anxiety caseness = score ≥ 8 on the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS)

Symptoms of depression caseness = score ≥ 8 on the anxiety subscale of the HADS

OR = odds ratio; 95% CI = 95% confidence interval

