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Norwegian Validation of the Occupational Depression Inventory

Bachelor's thesis in Psychology

Supervisor: Renzo Bianchi

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Preface

This study was conducted as the bachelor thesis in psychology at the Norwegian University of Science and Technology. The Study aimed to validate the Occupational Depression Inventory for use in a Norwegian context, and to learn more about the correlates of occupational depression. I would like to thank my supervisor, Renzo Bianchi, for his help and guidance through this project, as well as the project group for the helpful discussions and support.

Abstract

This study aimed to validate the newly developed Occupational Depression Inventory (ODI) in Norway and learn more about the correlates of occupational depression. A total of 485 employed persons participated in the study. Of the 480 participants who chose to disclose their gender 329 (69%) were female, and 151 (31%) were male. Factor analysis indicated the ODI to have a one-factor solution. The reliability of the ODI, indexed by Cronbach's alpha and McDonald's omega, was satisfactory. As expected, the measure showed both convergent and discriminant validity. About 2% of the participants ($n=11$) met the criteria for a provisional diagnosis of occupational depression. Occupational depression correlated most largely with turnover intention, $r=.49, p<.001$, workplace ostracism, $r=.42, p<.001$ and socioeconomic optimism, $r=-.31, p<.001$. Consistent with prior research, the measure exhibited satisfactory psychometric and structural properties within a Norwegian context, indicating that occupational health specialists can confidently rely on the ODI to investigate job-related distress.

Keywords: occupational depression inventory, burnout, Norway, workplace ostracism, depression, occupational health science

The Global Happiness Policy Report of 2018 found a strong relationship between working conditions and happiness (de Neve, 2018). Consistent with this finding Norway ranks highly in both respective fields. Firstly, having been placed as one of the top countries regarding employment, work-related health, wages, job security, and inclusion in the labour market by the OECD Job Quality Framework (Hvid & Falkum, 2019). And additionally, having been named ‘the happiest country in the world’ by the World Happiness Report 2017, continuing to stay in the top 10 ranking through the following years (Helliwell, et al., 2017; Helliwell, et al., 2022). Contrary to what this picture may suggest, depression is a notable public health issue as The Public Health Report from the Norwegian Institute of Public Health (NIPH) in 2018 estimated that 1 in 4 will experience depression or other mood disorders over the course of their life. International studies even indicate these figures to be too optimistic (NIPH, 2018, p.25).

Depression is considered the most common psychiatric condition (McCarron, et al., 2021) with approximately 280 million persons afflicted by the illness globally (IHME, 2019). The World Health Organization projects that by 2030 depression will be the leading contributor to the worldwide burden of disease. Effective treatments for the illness are, however, available, indicating that the burden can be reduced (WHO, 2008). Although these effective treatments exist, proper systems need to be put in place so as to enable the identification of people struggling, so that in turn, treatments can be made available to these individuals.

Biological and genetic predispositions increase a person’s vulnerability to the illness and can in some cases be the leading cause of a depressive episode. However, in most cases, the precipitating cause will lie in external events such as experienced trauma or hardship (Willner, et al., 2013). Especially where there are no noticeable vulnerabilities, the development of depressive episodes has been critically linked to experiences of unresolvable

stress (Willner et al., 2013; Moscarello and Hartley, 2017). As work-life and happiness are substantially linked, an interest in depressive symptoms linked to job stress and sick leave caused by mental health reasons has been emerging among occupational health specialists in recent years (Bianchi & Schonfeld, 2020). As job-related distress can have devastating effects on worker health, having instruments that allow occupational health researchers and practitioners to assess job-related distress reliably and validly is imperative (Bianchi, Verkuilen, et al., 2022).

Job-related distress does not only pose health-damaging and life-threatening risks, it also causes reduced performance, loss of productivity and job turnover, as well as being a financial burden, not only on organizations but on society as a whole (Gonzalez-Mulé & Cockburn, 2021; Hassard et al., 2018). In western countries, the cost of depression in the workplace is in billions of U.S. dollars and is regarded as an individual-, an organizational-, and a society-level problem (Bianchi & Schonfeld, 2020). In spite of this, no nosologically-grounded tool has been available for assessing occupational depression until recently (Hill et al., 2021). Thus far, this phenomenon has been approached through different measures of burnout, such as the Maslach Burnout Inventory (MBI) or the Copenhagen Burnout Inventory. These measures, as well as the concept of burnout as a whole, have however proved problematic. Symptoms assessed in burnout measures have shown to overlap significantly with the symptoms characterizing depression, while still missing core symptoms such as suicidal thoughts (Schonfeld & Bianchi, 2021). Furthermore, findings have shown researchers to employ 142 different categorizations of burnout (Rotenstein et al., 2018) indicating that there is little consensus on what the syndrome entails. Not surprisingly, this has led estimates of burnout's prevalence to vary from 3% to 91% in a large sample study conducted by Hewitt et al. (2020). The questionability of burnout prevalence estimates is implied by the lack of established diagnostic criteria for the syndrome (Bianchi & Schonfeld,

2021b). The impossibility of diagnosing the condition also hinders investigators' ability to recognize biological markers for burnout and to develop effective treatments and interventions (Bianchi & Schonfeld, 2021b).

The Occupational Depression Inventory (ODI) is part of a new approach to work-related distress (Bianchi, Fiorilli, et al., 2022). It was designed to quantify the severity of depressive symptoms attributed to work and establish provisional diagnoses of job-ascribed depression (Bianchi & Schonfeld, 2020). The measure consequently approaches work-related depression both categorically through a diagnostic approach, as well as dimensionally through a continuum-based approach (Bianchi, Fiorilli et al., 2022). Thus far, the ODI has been validated in English, French, Italian, Brazilian-Portuguese and Spanish and has been employed in France, Switzerland, Spain, South Africa, Australia, Brazil, New Zealand, as well as in the US. It has consistently demonstrated robust psychometric and structural properties across languages, geographic areas, and occupations (Bianchi et al., 2023) as revealed by in-depth validity and reliability analyses (Bianchi, Fiorilli et al., 2022).

The ODI consists of nine symptom items and a subsidiary question estimating turnover intention (Bianchi & Schonfeld, 2020). The nine symptom items assess anhedonic-somatic and dysphoric symptoms, in accordance with the diagnostic criteria for major depression of the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; APA, 2013). Uniquely, each symptom is assessed in relation to work (Hill, de Beer, & Bianchi, 2021). These items target anhedonia, depressed mood, sleep alterations, fatigue, appetite alterations, feelings of worthlessness, cognitive impairment, psychomotor alterations as well as suicidal ideation (Bianchi, Verkuilen, et al, 2022). It should be noted that assessing suicidal ideation does not pose any iatrogenic risk (Bianchi & Schonfeld, 2020). By referencing the nine core symptoms of major depression, the ODI has a broader symptom

coverage in comparison to the burnout scales (Bianchi & Schonfeld, 2021b). A paradigm shift from burnout to occupational depression may be invaluable in regard to combating depressogenic working conditions and helping stressed-out workers (Bianchi & Schonfeld, 2021b).

Though the ODI has been validated for use in several countries, it has never been employed in Norway. The properties of the ODI's Norwegian version, therefore, require clarification. Furthermore, as Norwegian work culture is highly esteemed internationally, it will be interesting to see the prevalence of occupational depression and to what degree Norwegian workplaces can be considered depressogenic. Not only will validating the ODI for use in a Norwegian context be beneficial in promoting better work environments, but one can also imagine it to have significant value for reducing the burden of disease by offering a clearer understanding of the causality of symptoms for people struggling with occupational depression.

This study aims to validate the newly developed ODI for Norwegian use and learn more about the correlates of occupational depression. Based on previous empirical findings, it is expected that the ODI will reflect a single, unitary construct - occupational depression. The ODI is also expected to correlate positively with job stressors such as workplace ostracism and verbal and physical abuse in the workplace. It is expected to correlate negatively with socioeconomic optimism, a question asked in relation to participants' expectations on Norway's socioeconomic prospects in the coming decades.

Methods

Study Sample

The data were collected using convenience sampling during February 2023 by nine bachelor students, myself included, studying psychology at NTNU. Participants were recruited through the use of personal networks, making announcements on social media platforms. (e.g., Facebook) and reaching out to different organizations. To be eligible for participation in the study, participants had to be currently employed and be at least 18 years of age.

Participation in the study was voluntary and confidential. Participants had the option of leaving the survey at any given moment if they felt uncomfortable answering any of the questions. This would withdraw their participation in the study. The study was anonymous. The study was conducted in accordance with the guidelines of the Norwegian Centre for Research Data.

The survey included an attention-check item intended for detecting careless respondents. Of the 547 initial respondents, 62 (11%) were identified as inattentive and excluded from the data. A total of 485 participants therefore constituted the final sample. Of the 485 participants, 209 (43%) were aged 18-34 (early career), 120 (25%) were aged 35-49 (mid-career), and 156 (32%) were aged 50+ (late career).

Measures of Interest

The ODI was the principal measure of interest in this study. The tool was developed referencing the nine diagnostic criteria for major depression from the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (APA, 2013), anhedonia, depressed mood, sleep alterations, fatigue/loss of energy, appetite alterations, feelings of worthlessness, cognitive impairment, psychomotor alterations, and suicidal ideation. (Bianchi

& Schonfeld, 2020). Respondents are asked to report on symptoms prevalent during the past two weeks, consistent with the diagnostic criteria for major depression in the DSM-5. A 4-point scale is employed to rate the items, where 0 signifies “never or almost never” and 3 signifies “nearly every day.” Each of the ODI items involves causal attributions to respondents’ work (e.g., “I felt depressed because of my job”). A subsidiary question relating to turnover intention is also included: “If you have encountered at least some of the problems mentioned above, do these problems lead you to consider leaving your current job or position?” The respondents are asked to answer with either: “yes,” “no,” or “I don't know.” This item was indented for investigators to be able to assess concrete work implications of the depressive symptoms reported. (Bianchi & Schonfeld, 2020).

The ODI’s sum, or mean, reflect work-attributed depressive symptoms, where higher scores indicate an individual to be more severely affected. For establishing a provisional diagnosis of job-ascribed depression, however, an algorithm created by Bianchi & Schonfeld (2020) is employed. A provisional diagnosis can be given if an individual presents a score of 3 on at least five of the nine symptom items of the ODI and one of these symptom items is item 1 measuring anhedonia or item 2 measuring depressed mood. A score of 3 corresponds to the symptom being experienced “nearly every day” (Bianchi & Schonfeld, 2020), a frequency of symptoms that coincides with the DSM-5 diagnostic criteria for major depression (APA, 2013).

The ODI’s instructions were formulated to discourage respondents from making hasty attributions of their depressive symptoms to work. Respondents are instructed to consider several symptom sources before answering. Respondents unable to attribute the source of their symptoms is also explicitly planned for. If a respondent considers a symptom to derive from any source other than work (e.g., marital problems, family problems) or is unable to

attribute a symptom to a specific source, they are instructed to select '0' when answering. Respondents are ultimately invited to report symptoms (by selecting a score other than '0') only when they are able to clearly attribute their symptoms to their work. (Bianchi, Verkuilen, et al., 2022).

The ODI was translated into Norwegian using a back-translation method. The English version was first translated into Norwegian by two native Norwegian speakers fluent in English. The Norwegian translation was then translated back into English by two different Norwegian speakers fluent in English. None of the translators were familiarized with the measure before participating in the translation process. Lastly the English version derived from the back-translation was compared to the original English version of the ODI. No problematic discrepancies were identified. Translation is available in Table 1.

Table 1

Norwegian version of the items of the Occupational Depression Inventory (ODI).

| Symptoms | Items |
|----------------------------------|---|
| Anhedonia | Mitt arbeid var så stressende at jeg ikke kunne glede meg over ting jeg vanligvis liker å gjøre. <i>My work was so stressful that I could not enjoy the things that I usually like doing</i> |
| Depressed mood | Jeg følte meg deprimert på grunn av jobben min. <i>I felt depressed because of my job</i> |
| Sleep alteration | Stress relatert til jobben førte til søvnproblemer (jeg hadde vanskelig for å sovne eller sove uforstyrret, eller jeg sov mye mer enn vanlig). <i>The stress of my job caused me to have sleep problems (I had difficulties falling asleep or staying asleep, or I slept much more than usual)</i> |
| Fatigue/loss of energy | Jeg følte meg utmattet på grunn av arbeidet mitt. <i>I felt exhausted because of my work.</i> |
| Appetite alterations | Jeg følte at appetitten min ble forstyrret på grunn av jobbstress (jeg mistet appetitten min, eller det motsatte, jeg spiste for mye). <i>I felt my appetite was disturbed because of the stress of my job (I lost my appetite, or the opposite, I ate too much)</i> |
| Feelings of worthlessness | Min opplevelse på jobb fikk meg til å føle meg mislykket. <i>My experience at work made me feel like a failure</i> |
| Cognitive impairment | Jobben min stresset meg så mye at jeg hadde problemer med å fokusere på det jeg gjorde (f.eks. å lese en avisartikkel) eller å tenke klart (f.eks. å ta beslutninger). <i>My job stressed me so much that I had trouble focusing on what I was doing (e.g., reading a newspaper article) or thinking clearly (e.g., to make decisions)</i> |
| Psychomotor alterations | Som et resultat av jobbstress følte jeg meg rastløs, eller det motsatte, alt gikk saktere—for eksempel i måten jeg beveget meg eller snakket på. <i>As a result of job stress, I felt restless, or the opposite, noticeably slowed down—for example, in the way I moved or spoke</i> |
| Suicidal ideation | Jeg tenkte at jeg ville heller være død enn å fortsette i denne jobben. <i>I thought that I'd rather be dead than continue in this job</i> |
| Turnover intention (SQ) | Dersom du har støtt på minimum noen av problemene nevnt ovenfor, fører disse problemene til at du vurderer å slutte i din nåværende jobb eller stilling? <i>If you have encountered at least some of the problems mentioned above, do these problems lead you to consider leaving your current job or position?</i> |

Data Analyses

McDonald's omega (ω) and Cronbach's alpha (α) were computed to estimate the total-score reliability of the ODI. Although a threshold of .70 is commonly considered acceptable regarding reliability indices, it is recommended in the context of basic research to increase the threshold to .80 (Lance, Butts, & Michels, 2006). This analysis will therefore employ the latter. A factor analysis with an oblique (promax) rotation was employed to examine the factorial validity of the ODI. The threshold for factor loadings was set to .30.

Pearson's correlations (r) were employed to (a) estimate the criterion validity of the ODI and (b) examine the ODI's discriminant validity with respect to an attribution-free, "cause neutral" measure of depressive symptoms. The attribution-free, "cause neutral" measure of depressive symptoms used in this study was the depression subscale of the Hospital Anxiety and Depression Scale (HADS). Correlations below .29 are considered small correlations, those between .30 and .49 are considered moderate, and correlations above .50 are considered to be strong. Regarding discriminant validity, following a general rule of thumb, values above .85 would be considered too high and indicative of a lack of discriminant validity.

Results

Descriptive Statistics

Of the 485 participants 329 were female, 69%, and 151 were male, 31%, whilst the remaining 5 chose not to disclose their gender. Of the 485 respondents, 209 (43%) were aged 18-34 (early career), 120 (25%) were aged 35-49 (mid-career), and 156 (32%) were aged 50+ (late career). About 2% of the participants ($n=11$) met the criteria for a provisional diagnosis of job-ascribed depression. See Table 2 for descriptive statistics for each item of the Occupational Depression Inventory.

Regarding turnover intention, 149 of the participants, 31%, answered “Ja” (yes) to having considered leaving their job, and 175 participants, 36% answered “Nei” (no) and 63 (13%) answered “Jeg vet ikke” (I don’t know). The remaining 98 participants (20%) answered “Jeg møtte ikke disse problemene” (I haven’t experienced these issues) and were excluded from the analysis.

In regards to ostracism 108 respondents, 22%, answered that they experienced being ignored sometimes, often, or always, 64 respondents, 13%, had experienced being excluded from the conversation sometimes, often, or always. 55 respondents, 11%, had experienced being treated as if they were not present sometimes, often, or always, and 73 respondents, 15%, had experienced not being invited to activities sometimes, often, or always. In total 29 of the respondents, 6%, had an average score of 3.00 or higher regarding workplace ostracism, $M=1.59$, $SD=.69$. 34 respondents, 7%, had experienced physical aggression during the last six months, $M=0.07$, $SD=.26$, and 135 respondents, 28%, had experienced verbal abuse in the last six months, $M=0.29$, $SD=.45$.

When asked if the respondents were optimistic in regard to the socioeconomic future of Norway in the decades to come 86 of the respondents (18%) answered that they were “Ikke optimistisk i det hele tatt” (not optimistic at all), 123 respondents (25%) responded that

they were “Litt optimistisk” (a bit optimistic), 246 (51%) were “Middels optimistisk” (moderately optimistic), and 29 respondents (6%) answered “Veldig optimistisk” (very optimistic). Only 1 respondent answered that they were “Ekstremt optimistisk” (extremely optimistic).

Table 2

Descriptive statistics for the Occupational Depression Inventory (N=485)

| Indicators | ODI1 | ODI2 | ODI3 | ODI4 | ODI5 | ODI6 | ODI7 | ODI8 | ODI9 | Total score |
|-----------------------------|------|------|-------|-------|------|------|------|------|-------|-------------|
| Mean | 0.75 | 0.60 | 0.84 | 1.03 | 0.57 | 0.65 | 0.55 | 0.59 | 0.10 | 0.63 |
| Standard deviation | 0.82 | 0.80 | 0.90 | 0.91 | 0.84 | 0.79 | 0.73 | 0.82 | 0.40 | 0.58 |
| Skewness (<i>SE</i> =0.11) | 0.94 | 1.32 | 0.81 | 0.65 | 1.41 | 1.22 | 1.14 | 1.34 | 4.95 | 1.20 |
| Kurtosis (<i>SE</i> =0.22) | 0.36 | 1.22 | -0.24 | -0.32 | 1.18 | 1.12 | 0.59 | 1.12 | 27.10 | 1.35 |
| Minimum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Maximum | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 |

Notes.

ODI1: anhedonia; ODI2: depressed mood; ODI3: sleep alterations; ODI4: fatigue/loss of energy; ODI5: appetite alterations; ODI6: feelings of worthlessness; ODI7: cognitive impairment; ODI8: psychomotor alterations; ODI9: suicidal ideation.

Total-score Reliability

All multi-item scales utilized in this study showed strong total-score reliability. The ODI showed the strongest scores with Cronbach’s α at .90 and McDonald’s ω at .89, followed by the Ostracism short scale presenting Cronbach’s α at .85 and McDonald’s ω at .86. Lastly the depression subscale of the Hospital Anxiety and Depression scale displayed both Cronbach’s α and McDonald’s ω at .85.

Correlational Analyses

As anticipated, the ODI mean scores correlated substantially, but not too highly, with the HADS mean scores, $r=.66$, $p<.001$, suggesting the discriminant validity of the ODI to be satisfactory. Further, Occupational depression correlated most largely with turnover intention,

$r=.49, p<.001$, workplace ostracism, $r=.42, p<.001$ and socioeconomic optimism, $r=-.31, p<.001$. See Table 3 for remaining correlations.

Table 3

Correlation Among the Main Variables of Interest (N=485)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------------------|---------|---------|---------|--------|-------|---------|---------|-------|-------|---------|----|
| 1. Occupational depression | - | | | | | | | | | | |
| 2. Physical aggression | .09* | - | | | | | | | | | |
| 3. Verbal abuse | .22*** | .33*** | - | | | | | | | | |
| 4. Sick leave | .26*** | .02 | .06 | - | | | | | | | |
| 5. Job promotion | -.07 | -.06 | -.02 | -.04 | - | | | | | | |
| 6. General depression | .66*** | .02 | .09 | .25*** | -.10* | - | | | | | |
| 7. Workplace ostracism | .42*** | .01 | .19*** | .15*** | -.05 | .41*** | - | | | | |
| 8. Sex | -.19*** | -.01 | -.02 | -.13** | .04 | -.08 | -.02 | - | | | |
| 9. Age | -.14** | -.17*** | -.18*** | .02 | -.11* | -.13** | .02 | .06 | - | | |
| 10. Socioeconomic optimism | -.31*** | -.03 | -.22*** | -.15** | .05 | -.32*** | -.24*** | .07 | -.00 | - | |
| 11. Turnover intention | .49*** | -.02 | .13* | .17** | -.10* | .43*** | .34*** | -.13* | -.12* | -.26*** | - |

* $p<.05$

** $p<.01$

*** $p<.001$

Factorial Validity

As expected, the factor analysis extracted only one factor, Occupational Depression, and supports the ODI as being unidimensional. The data showed good factorability with Bartlett's test being significant, $p<.001$ and $KMO=.92$. All factor loadings were above .30, and all factor loadings, except ODI9, were above .60. ($M=.69, SD=.12, range=.38$). See Table 4 for further details about the factor analysis.

Table 4
 Factor analysis of the Occupation Depression Inventory (N=485).

| | Occupational Depression | Communality |
|-----------------------|----------------------------|-------------|
| ODI1 | .78 | .61 |
| ODI2 | .72 | .52 |
| ODI3 | .72 | .52 |
| ODI4 | .79 | .62 |
| ODI5 | .66 | .44 |
| ODI6 | .64 | .41 |
| ODI7 | .77 | .60 |
| ODI8 | .73 | .53 |
| ODI9 | .41 | .17 |
| Eigenvalue | 4.89 | |
| % of variance | 49 | |
| Total variance | 49 | |

Note.

All factor loadings above 0.4 are in bold.

Extractionmethod was maximum likelihood. As only one factor was extracted, the solution cannot be rotated. Values are reported from factor matrix.

ODI1: anhedonia; ODI2: depressed mood; ODI3: sleep alterations; ODI4: fatigue/loss of energy; ODI5: appetite alterations; ODI6: feelings of worthlessness; ODI7: cognitive impairment; ODI8: psychomotor alterations; ODI9: suicidal ideation.

Discussion

This study ($N=485$) aimed to validate the ODI for Norwegian use whilst learning more about the correlates of occupational depression. About 2% of the participants ($n=11$) met the criteria for a provisional diagnosis of job-ascribed depression. It is however important to remember that the sample used in this study may not be representative of the Norwegian workforce, and this result therefore needs to be interpreted with caution.

Main Findings

The Norwegian version of the ODI exhibited high factorial validity and essential unidimensionality. This is consistent with results from previous validity studies of the ODI done across several geographic and linguistic areas (e.g., Bianchi & Schonfeld, 2020; Hill, de Beer & Bianchi, 2021; Bianchi, Verkuilen, et al., 2022). Women and younger respondents tended to report more depressive symptoms. In compliance with previous studies, the fatigue/loss of energy item was the most commonly endorsed item of the ODI, whilst the suicidal ideation item was the least commonly endorsed. The ODI showed strong total score reliability, as well as satisfactory discriminant and criterion validity.

To estimate the total-score reliability of the ODI McDonald's omega (ω) and Cronbach's alpha (α) were computed. Regardless of the reliability index employed, the ODI's total-score reliability exceeded .80. As mentioned, it is fairly common to claim a threshold of .70 as acceptable in regard to reliability indices, however, a threshold of .80 is recommended in the context of basic research. (Lance, Butts, & Michels, 2006). As we are basing our analysis on the latter the ODI is well within what is considered acceptable, and one can therefore claim the ODI to display strong total-score reliability. Regarding applied research, however, the recommended threshold is set at a minimum of .90. (Lance, Butts, & Michels,

2006). Considering the intention of the ODI, one could argue that the .90 threshold should be applied in research on the subject. In this study the reliability scores were $\alpha=.90$ and $\omega=.89$, which is right on and below the aforementioned threshold. On its own, this could be indicative of the ODI having less than desirable total score reliability for applied research. However, the nature of the study's sample could be at fault for this, as convenience sampling was employed, and the sample may therefore not be representative of the Norwegian workforce. As previous studies of the ODI present values well above the .90 threshold (e.g., Bianchi & Schonfeld, 2020; Hill, de Beer & Bianchi, 2021; Bianchi, et al., 2023) one could reason that the lower reliability score is limited to this study and not representative of the reliability of the ODI. Looking at both the reliability measures of this study as well as those of previous studies the claim that the ODI has strong total-score reliability still stands. This is particularly promising for the use of the ODI in medical and public health contexts (Bianchi, et al., 2023).

As the ODI was developed to assess depressive symptoms specifically attributed to work, whilst classical measures of depressive symptoms involve no etiological considerations (Bianchi, Verkuilen, et al., 2022), it is expected for the measure to present a balance of convergent and discriminant validity. The issue of discriminant validity was addressed using Pearson's correlation between the ODI and the depression subscale of HADS. A substantial correlation between the two variables was expected as they both assess depressive symptom, however a correlation above .85 might have indicated a lack of discriminant validity. The correlation found between the ODI and the depression subscale of HADS was .66, indicating two things. Firstly, that the ODI is similar enough to attribution-free measures of depressive symptoms for the stress and depression research the ODI is anchored in to be relevant. And secondly, that the measures are different enough for the ODI to be reflecting and assessing something other than what classical and work-unrelated depression scales are assessing.

Workplace Stressors

Occupational depression correlated positively with the three stressors verbal abuse, physical abuse, and workplace ostracism. The correlations with verbal abuse and physical aggression were surprisingly low, particularly the latter. The correlation between the ODI and workplace ostracism was, however, moderate, and we will therefore focus primarily on this correlation.

Ostracism is by Williams (2009) defined as “excluding and ignoring by individuals or groups” and in the ostracism in the workplace refers to the extent at which an employee feels excluded and/or ignored by co-workers (Ferris, Brown, Berry & Lian, 2008). Williams’ temporal need-threat model of ostracism highlights how ostracism uniquely, in comparison to physical or verbal altercations, can be experienced as threatening to four fundamental needs. The need for belonging, the need for a reasonably high self-esteem, the need for perceived social control over one’s own social environment and lastly, the need for feeling recognized and being worthy of attention (Williams, 2009). Although there has been some debate as to whether these *needs* are just that, or rather motives, there does appear to be enough evidence that if there is not maintained satisfactory levels of these constructs, it could result in psychological harm (Williams, 2009).

Workplace ostracism has already been found to be a major contributor to worker burnout (Sulea, et al., 2012). Now, although we in this study have highlighted many of the issues concerning the burnout syndrome and in turn, presented the ODI as a much better alternative, one could argue that research referencing burnout can still be valuable in understanding correlates of the ODI. The aforementioned find exemplifies this and is further substantiated by the correlation found between workplace ostracism and occupational depression, see Table 3.

We found that 6% of respondents had experienced being ignored, excluded from conversations, treated as if they were not present and/or not invited to activities sometimes, often, or always during the last two months. Although verbal abuse seems to be the most commonly endured workplace stressor, with 135 respondents, 28%, having experienced it, the correlation between occupational depression and verbal abuse is significantly lower than that between workplace ostracism and occupational depression. The correlation between physical assault and occupational depression being even lower still. Although this correlation might seem counterintuitive as exclusion is often considered more acceptable than harassment and abuse, research actually shows ostracism to be much more damaging to individual's mental health (O'Reilly, et al., 2015). In fact, accounts of targets of long-term ostracism actually show that people would prefer verbal or physical abuse to being ostracized (Williams, 2001). Although these types of abuse are still aversive, they allow the target to feel acknowledged by the abuser, either through dialogue or physical attacks, which relates back to the need for feeling recognized and being worthy of attention introduced in Williams' need-threat model. (Williams, 2009). Verbal and physical abuse also lowers the ambiguity regarding whether one is actually being abused and makes it clearer for the victim when the abusive episode has stopped. (Williams, 2001).

As we can see there are a number of studies reporting detrimental effects of workplace ostracism, many of which are reflected in the ODI. Firstly, ostracism has shown to be quite damaging to individuals' psychological states, this could manifest as anxiety and depression, (Ferris, et al., 2008) as well as manifesting as feelings of inadequacy. This can be directly linked to both the ODI2 measuring depressed moods, as well as ODI6 measuring feelings of worthlessness. Secondly, workplace ostracism has been found to negatively affect employees' job attitudes, which is seen through intention to quit, and lack of job satisfaction (Ferris, et al., 2008). The intention to leave one's job is directly measured in the ODI through the subsidiary

question assessing turnover intention, and the symptom items of the ODI have been clearly associated with turnover intention (Bianchi & Schonfeld, 2020). Both of these finds are further corroborated by the correlations found in this study between ostracism and turnover intention, as well as the ODI and turnover intention. (See Table 3). Lastly, being ostracised have shown to have behavioural outcomes, such as engaging less in prosocial behaviours (Balliet & Ferris, 2013) and more in self-defeating behaviours such as procrastination and making poor choices (Twenge, Catanese, & Baumeister, 2002). As prosocial behaviour has been shown to increase positive moods, especially among people reporting higher depressive symptoms (Schacter & Margolin, 2019) a decline in prosocial behaviour could potentially be substantiating depressive symptoms.

It is, however, important to distinguish between correlation and causality. Although we can see a significant correlating relationship between Occupational Depression and Workplace Ostracism, we do not know anything about the causal relationship between the two variables. Although many of the consequential symptoms of being ostracised are measured in the ODI, Occupational Depression, as well as other mental disorders, could potentially lead employees to feel ostracised by co-workers. Further research could therefore benefit from looking into the differences in mentally “healthy” people vs. mentally ill individuals when making causal attributions.

Occupational depression and workplace ostracism are also comparable in that they have both been found to result in cognitive impairment. Studies show that ostracized individuals will enter a deconstructed cognitive state with a lack of self-awareness and little concern for long-term goals (Twenge, Catanese, & Baumeister, 2003). Self-awareness and comprehension of the long-term consequences of one’s own actions are important components of self-regulation (Carver & Scheier, 1981) so ostracized individuals displaying a

variety of behaviours indicating an inability to self-regulate is therefore unsurprising (Baumeister et al., 2005). Exclusion have also proven to impair logical reasoning (Baumeister, Twenge, & Nuss, 2002). Occupational depression has more specifically been linked to poorer cognitive performance (Bianchi, & Schonfeld, 2021c; Bianchi & Schonfeld, 2022) and a negativized experience of cognitive challenges. The depressive symptoms are thought to potentially render the cognitive challenges more difficult and unpleasant, and in turn feed the depressive symptoms further. (Bianchi, & Schonfeld, 2021c). As we can see both occupational depression and workplace ostracism result in cognitive impairment, albeit in different ways. What the two have in common, however, seem to be the experience of losing oneself, and a lack of meaning and determination for what was once considered important for the individual. As well as the course being somewhat cyclical in that the symptoms that arise are involved in amplifying and/or maintaining said symptoms.

Cognitive alterations have been considered a principal mediator of the relationship between clinical depression and psychosocial impairment, notably workforce performance. (McIntyre et al., 2013; Lam et al., 2014; Pan et al., 2019). In many jobs a decrease in cognitive performance can result in career-related setbacks such as being passed over for promotions or even discharged (Bianchi & Schonfeld, 2022). Research from Xia, et al., showed that workplace ostracism is negatively correlated with task performance through a reduction in employees' emotional energy and physical strength (Xia, et al., 2019). Unfortunately, with the growth of external competition, workplace ostracism is becoming more frequent in modern-day workplaces (Robinson, O'Reilly & Wang, 2013). A survey by Hitlan, et al., (2006), surveyed over 5,000 workers and found that 13% of respondents had experienced being excluded at work in the previous six months. A different survey by Fox and Stallworth (2005) examined the relationship between the incidence of workplace bullying and the everyday experiences of racial and ethnic minorities in American workplaces. Their

study revealed that over a 5-year period, 66% of the respondents had experienced being given the silent treatment, 29% had experienced co-worker leaving the room when they entered, and 18% had experienced being moved to an isolated location. As the survey done by Fox and Stallworth present much higher numbers than this study, and that of Hitlan, et al. it could be especially important to focus on the prevalence and prevention of workplace ostracism experienced by individuals belonging to different minorities.

With such evidence of cognitive decrements being related to or caused by job-related depressive symptoms, organizations will have to inquire into the possibly depressogenic working conditions rather than reprimanding their employees. This is according to the Working Environment Act as it is stated that the purpose of the act is «to secure a working environment that provides a basis for a healthy and meaningful working situation, that affords full safety from harmful physical and mental influences» (Working environment Act, 2006, §1-1)

Socioeconomic Optimism

As expected, we also found the ODI to correlate negatively with socioeconomic optimism. Socioeconomic is a compounded term and is related to both social and economic conditions. The respondents were asked to answer the question “Er du optimistisk med tanke på den sosioøkonomiske fremtiden til Norge i tiårene som kommer?» (Are you optimistic about the socioeconomic future of Norway in the coming decades?). The majority of the respondents were moderately optimistic, however, around 43% of respondents were below this level of optimism.

Firstly, we will look at the economic conditions. Finance Norway, the industry organization for the financial industry in Norway (Finans Norge, n.d), and Kantar Public,

Norway's leading data, insights, and consulting company (Kantar, n.d), measure the expectations of Norwegian households regarding their own and the country's economy each quarter. The measurements from the last quarter of 2022 showed the lowest numbers measured since the beginning of the Expectations Barometer, which began in 1992. The first measurement of 2023, although showing a flattening curve from last quarter, continued to show consumers to have historically low confidence in the economic future (Finans Norge, 2023).

Based on events during the past couple of years this may not be that surprising. The war in Ukraine has led to record-high energy prices as well as prices having increased on many input goods. This has to a large degree resulted in businesses passing the costs on to consumer prices, resulting in high inflation. This, in addition to Norges Bank increasing the policy rate from 0.50% to 2.75% throughout 2022, has reduced many households' purchasing power significantly. Low-income and highly indebted households have been particularly vulnerable. Although there has not been a significant decrease in consumer spending quite yet, it is estimated to decrease as purchasing power is decreasing. This will in turn affect the growth of the Norwegian economy. Lower growth in domestic and global demand is also thought to potentially weaken mainland businesses investment outlook, higher interest rates will result in fewer commercial property projects and less residential construction (Olsen & Cekov, 2023). The Norwegian economy is, however, still very solid with the expected continuing rise of energy and petroleum investments (Olsen & Cekov, 2023), the Government Pension Fund being of a considerable size, and unemployment rates being very low. (Finans Norge, 2023). Kreutzer, CEO of Finance Norway, therefore, points out the paradoxicality of Norwegian households' pessimistic attitudes, and highlights how this is a testament to the economic challenges having hit the average Norwegian consumer hard (Finans Norge, 2023).

Moving onto the social conditions. Norway is a country well known for its welfare model. Integral parts of this model are a) the states contributions to high occupational participation through free public education and an active labour market policy, b) a well-regulated working life and tripartite collaboration with strong employee- and employer organizations, c) a high quality public welfare offer that is primarily tax-funded, d) a universal and well-developed welfare system in the event of unemployment, disability, illness and/or old age, and e) a comprehensive family policy promoting gender equality. Collective financing of individual rights is also guiding principle of the Norwegian model (Brochmann & Norge Barne-, likestillings- og inkluderingsdepartementet, 2011). It is therefore logical to think that a rise in pessimistic attitudes towards the economic future, both personal and national, would translate to somewhat pessimistic attitudes towards the future of the social conditions provided by the welfare state.

A high level of trust towards fellow citizens, the government, the judiciary and in other public institutions is also highlighted as a characteristic of the Norwegian welfare model. Opinion polls show citizens of the Nordic countries to express more trust than any of the other European countries. This level of trust in the government and its systems is assumed to be integral for the general acceptance of the welfare model. (Brochmann & Norge Barne-, likestillings- og inkluderingsdepartementet, 2011). Furthermore, trust is considered a personality trait linked to the cognitive ability to analyze social cues to assess the trustworthiness of those around (Yamagishi, 2011). Studies across different cultures have consistently linked low levels of trust with major depressive disorder (Lofors & Sundquist, 2007; Fujiwara & Kawachi, 2008; Kim, et al., 2012; Cao, et al., 2015; Fermin, et al., 2022). Forsman, Nyqvist, and Wahlbeck (2011) also found further correlations between interpersonal trust, depression, and low experienced social support.

Following these finds it is unsurprising to see the negative correlation between socioeconomic optimism and ODI scores, as lower levels of trust would potentially lead individuals to losing trust in the systems put in place to help them. Looking at numbers regarding mental health care in Norway, one could further reason that an unmet need for timely and proper health care is substantiating these lowered levels of trust and optimism among those struggling. In 2022, the average waiting time from a referral to specialized mental health care until the start of treatment for adults in Norway was 50.4 days at national level. An increase of 4.4 days compared to 2021. The target set for the average waiting time is under 40 days (Helsedirektoratet, 2019). In addition to this, a review of European community studies estimated that only 26% of people with mental disorders actually seek out health care, further suggesting a considerable number of unmet needs (Wittchen & Jacobi, 2005). Although more research is needed to fully understand why these numbers are so low, one could speculate as to whether this is in part due to a lack of belief in the health care system by people struggling with mental disorders.

With the existing effective treatments for depression (WHO, 2008), it is worrisome that that these treatments are not being made available to everyone in need of them. Not only is this taking a massive toll on individuals, but it is also a strain on organizations and the Norwegian welfare state. It was estimated that 22% of sick leave registered by NAV (2022) in 2022 was due to mental disorders, only musculoskeletal disorders had a higher percentage. Furthermore, studies show mental health problems to be more common among the unemployed (Murphy & Athanasou, 1999; McKee-Ryan, et al., 2005; Paul & Moser, 2009), indicating this type of sick leave to create a vicious cycle. Early intervention can therefore be crucial in preventing or breaking this cycle. Moreover, as high labour force participation is a prerequisite for the functionality and financial sustainability of the Welfare model (Brochmann & Norge Barne-, likestillings- og inkluderingsdepartementet, 2011), the

Norwegian welfare state, as well as its inhabitants, could greatly benefit from the ODI to be able to more quickly and efficiently diagnose and treat occupational depression in order to reduce the course of disease.

Study limitations

There are noteworthy limitations to this study. First, a method of convenience sampling was used for recruiting participants, which limits the study's external validity. The representativeness of the sample vis-à-vis its population of reference is unclear. Consequently, this study cannot provide a generalizable estimate of the prevalence of occupational depression in the Norwegian working population. Second, the overlap between burnout and depression was not examined. However, as this issue has been addressed extensively in past research, including ODI-based research, looking into this was deemed noncritical for this study. Third, one should mention the limitations of the program used for running the statistical analyses, SPSS, as the program's factor analysis is considered far from optimal. As the study's aim was only to get a glimpse of the ODI's factorial structure, the use of the program is, however, not damning to the study.

Conclusion

Consistent with previous research on the ODI, the measure exhibited satisfactory psychometric and structural properties within a Norwegian context. Implementing the ODI in investigations on job-related distress in Norwegian workplaces, could potentially provide important information about the mental health of the Norwegian workforce. By enabling identification of depressogenic factors and individuals suffering from occupational depression, the measure would be invaluable in protecting employees and offering proper treatments for the condition. Considering the correlates found between occupational

depression and socioeconomic optimism, this would not only benefit individuals experiencing job-ascribed depression but would also seem to benefit the Norwegian welfare state as a whole.

References

- American Psychiatric Association. (APA). (2013). Diagnostic and statistical manual of mental disorders : DSM-5 (5th ed., pp. XLIV, 947). American Psychiatric Association.
- Balliet, D., & Ferris, D. L. (2013). Ostracism and prosocial behavior: A social dilemma perspective. *Organizational Behavior and Human Decision Processes*, 120(2), 298–308. <https://doi.org/10.1016/j.obhdp.2012.04.004>
- Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social Exclusion Impairs Self-Regulation. *Journal of Personality and Social Psychology*, 88(4), 589–604. <https://doi.org/10.1037/0022-3514.88.4.589>
- Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of Social Exclusion on Cognitive Processes. *Journal of Personality and Social Psychology*, 83(4), 817–827. <https://doi.org/10.1037/0022-3514.83.4.817>
- Bianchi, R., Cavalcante, D. C., Queirós, C., Santos, B. D. M., Verkuilen, J., & Schonfeld, I. S. (2023). Validation of the Occupational Depression Inventory in Brazil: A study of 1612 civil servants. *Journal of Psychosomatic Research*, 167, 111194–111194. <https://doi.org/10.1016/j.jpsychores.2023.111194>
- Bianchi, R., Fiorilli, C., Angelini, G., Dozio, N., Palazzi, C., Palazzi, G., Vitiello, B., & Schonfeld, I. S. (2022). Italian version of the Occupational Depression Inventory: Validity, reliability, and associations with health, economic, and work-life characteristics. *Frontiers in Psychiatry*, 13, 1061293–1061293. <https://doi.org/10.3389/fpsyt.2022.1061293>

- Bianchi, R. & Schonfeld, I. S. (2020). The Occupational Depression Inventory: A new tool for clinicians and epidemiologists. *Journal of Psychosomatic Research*, 138, 110249–110249. <https://doi.org/10.1016/j.jpsychores.2020.110249>
- Bianchi, R. & Schonfeld, I. S. (2021) a. The Occupational Depression Inventory—A Solution for Breaking the Impasse of Burnout Measurement. *JAMA Surgery*, 156(6), 589–590. <https://doi.org/10.1001/jamasurg.2021.0018>
- Bianchi, R. & Schonfeld, I. S. (2021) b. The Occupational Depression Inventory—a solution for estimating the prevalence of job-related distress. *Psychiatry Research*, 305, 114181–114181. <https://doi.org/10.1016/j.psychres.2021.114181>
- Bianchi, R., & Schonfeld, I. S. (2021) c. Occupational Depression, Cognitive Performance, and Task Appreciation: A Study Based on Raven’s Advanced Progressive Matrices. *Frontiers in Psychology*, 12, 695539–695539. <https://doi.org/10.3389/fpsyg.2021.695539>
- Bianchi, R., & Schonfeld, I. S. (2022). Is the Occupational Depression Inventory predictive of cognitive performance? A focus on inhibitory control and effortful reasoning. *Personality and Individual Differences*, 184, 111213. <https://doi.org/10.1016/j.paid.2021.111213>
- Bianchi, R., Verkuilen, J., Sowden, J.F. & Schonfeld, I.S. (2022). *Towards a new approach to job-related distress: A three-sample study of the Occupational Depression Inventory*. <https://doi.org/https://doi.org/10.1002/smi.3177>
- Bianchi, R., Schonfeld, I. S., & Verkuilen, J. (2020). A five-sample confirmatory factor analytic study of burnout-depression overlap. *Journal of Clinical Psychology*, 76(4), 801–821. <https://doi.org/10.1002/jclp.22927>
- Brochmann, G., & Norge Barne-, likestillings- og inkluderingsdepartementet. (2011). Velferd og migrasjon: den norske modellens framtid: utredning fra utvalg oppnevnt ved

kongelig resolusjon av 6. mai 2009: avgitt til Barne-, likestillings- og inkluderingsdepartementet 10. mai 2011: Vol. NOU 2011:7 (p. 388).

Departementenes servicesenter, Informasjonsforvaltning.

Cao, W., Li, L., Zhou, X., & Zhou, C. (2015). Social capital and depression: evidence from urban elderly in China. *Aging & Mental Health*, 19(5), 418–429.

<https://doi.org/10.1080/13607863.2014.948805>

Cappelen, Å., & Norge Finansdepartementet. (2009). Fordelingsutvalget: utredning fra et utvalg oppnevnt av Finansdepartementet 25. april 2008: avgitt 30. april 2009: Vol. NOU 2009:10 (p. 397). Departementenes servicesenter, Informasjonsforvaltning.

Carver, C. S., & Scheier, M. F. (1981). *Attention and Self-Regulation*. Springer New York.

<https://doi.org/10.1007/978-1-4612-5887-2>

de Neve, J-E. (2018) *Work and Well-being: A Global Perspective*, In: *Global Happiness Policy Report 2018*, UN: World Happiness Council

Fermin, A. S. R., Kiyonari, T., Matsumoto, Y., Takagishi, H., Li, Y., Kanai, R., Sakagami, M., Akaishi, R., Ichikawa, N., Takamura, M., Yokoyama, S., Machizawa, M. G., Chan, H.-L., Matani, A., Yamawaki, S., Okada, G., Okamoto, Y., & Yamagishi, T. (2022). The neuroanatomy of social trust predicts depression vulnerability. *Scientific Reports*, 12(1), 16724–16724. <https://doi.org/10.1038/s41598-022-20443-w>

Ferris, D. L., Brown, D. J., Berry, J. W., & Lian, H. (2008). The development and validation of the workplace ostracism scale. *Journal of Applied Psychology*, 93(6), 1348–1366.

<https://doi.org/10.1037/a0012743>.

Finans Norge. (2023.15.02.) *Bunnpunktet passert i nordmenns økonomiske fremtidstro?*

Finans Norge. <https://www.finansnorge.no/artikler/2023/02/bunnpunktet-passert-i-nordmenns-okonomiske-fremtidstro/>

Finans Norge. (n.d). *Om Finans Norge*. Finans Norge. Retrieved May 12, 2023, from <https://www.finansnorge.no/om-finans-norge/>

Forsman, A. K., Nyqvist, F., & Wahlbeck, K. (2011). Cognitive components of social capital and mental health status among older adults: A population-based cross-sectional study. *Scandinavian Journal of Public Health*, 39(7), 757–765.
<https://doi.org/10.1177/1403494811418281>

Fox, S., & Stallworth, L. E. (2005). Racial/ethnic bullying: Exploring links between bullying and racism in the US workplace. *Journal of Vocational Behavior*, 66(3), 438–456.
<https://doi.org/10.1016/j.jvb.2004.01.002>

Fujiwara, T., & Kawachi, I. (2008). A prospective study of individual-level social capital and major depression in the United States. <https://doi.org/10.1136/jech.2007.064261>

Gonzalez-Mulé, E., & Cockburn, B. S. (2021). This job is (literally) killing me: A moderated-mediated model linking work characteristics to mortality. *Journal of Applied Psychology*, 106(1), 140–151. <https://doi.org/10.1037/apl0000501>

Gustavsen, B. (2011). The Nordic Model of Work Organization. *Journal of the Knowledge Economy*, 2(4), 463–480. <https://doi.org/10.1007/s13132-011-0064-5>

Hassard, J., Teoh, K. R. H., Visockaite, G., Dewe, P., & Cox, T. (2018). The Cost of Work-Related Stress to Society: A Systematic Review. *Journal of Occupational Health Psychology*, 23(1), 1–17. <https://doi.org/10.1037/ocp0000069>

Helliwell, J., Layard, R., & Sachs, J. (2017). *World Happiness Report 2017*, New York: Sustainable Development Solutions Network.

Helliwell, J. F., Layard, R., Sachs, J. D., De Neve, J.-E., Aknin, L. B., & Wang, S. (Eds.).

- (2022). World Happiness Report 2022. New York: Sustainable Development Solutions Network.
- Helsedirektoratet (2019). Psykisk helse for voksne - ventetid [online]. Oslo: Helsedirektoratet
Last updated May 4, 2023, retrieved May 13, 2023 from,
<https://www.helsedirektoratet.no/statistikk/kvalitetsindikatorer/psykisk-helse-for-voksne/gjennomsnittlig-ventetid-for-voksne-i-psykisk-helsevern>
- Hewitt, D. B., Ellis, R. J., Hu, Y.-Y., Cheung, E. O., Moskowitz, J. T., Agarwal, G., & Bilimoria, K. Y. (2020). Evaluating the Association of Multiple Burnout Definitions and Thresholds With Prevalence and Outcomes. *JAMA Surgery*, 155(11), 1043–1049.
<https://doi.org/10.1001/jamasurg.2020.3351>
- Hill, C., de Beer, L. T., & Bianchi, R. (2021). Validation and measurement invariance of the Occupational Depression Inventory in South Africa. *PloS One*, 16(12), e0261271–e0261271. <https://doi.org/10.1371/journal.pone.0261271>
- Hitlan, R. T., Kelly, K. M., Schepman, S., Schneider, K. T., & Zarate, M. A. (2006). Language exclusion and the consequences of perceived ostracism in the workplace. *Group Dynamics: Theory, Research, and Practice*, 10, 56–70.
<https://doi.org/10.1037/1089-2699.10.1.56>
- Hvid, H., & Falkum, E. (2019). *Work and wellbeing in the Nordic countries* (1st ed.). Routledge. <https://doi.org/10.4324/9781351169967>
- Institute of Health Metrics and Evaluation (IHME). (2019). Global Health Data Exchange (GHDx). <https://vizhub.healthdata.org/gbd-results/?params=gbd-api-2019-permalink/d780dffbe8a381b25e1416884959e88b>
- Kantar. (n.d). *Norway*. Kantar. Retrieved May 12, 2023, from
[https://www.kantar.com/locations/norway#_ =](https://www.kantar.com/locations/norway#_=)

- Kim, S.-S., Chung, Y., Perry, M. J., Kawachi, I., & Subramanian, S. V. (2012). Association between interpersonal trust, reciprocity, and depression in South Korea: A prospective analysis. *PloS One*, 7(1), e30602–e30602.
<https://doi.org/10.1371/journal.pone.0030602>
- Lam, R. W., Kennedy, S. H., McIntyre, R. S., & Khullar, A. (2014). Cognitive Dysfunction in Major Depressive Disorder: Effects on Psychosocial Functioning and Implications for Treatment. *Canadian Journal of Psychiatry*, 59(12), 649–654.
<https://doi.org/10.1177/070674371405901206>
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The Sources of Four Commonly Reported Cutoff Criteria. *Organizational Research Methods*, 9(2), 202–220.
<https://doi.org/10.1177/1094428105284919>
- Liu, C., & Ma, J. (2021). Workplace ostracism: its nature, antecedents, and consequences (1st edition 2021., p. 1 online resource (XIII, 303 p. 1 illu)). Springer.
- Lofland, J. H., Pizzi, L., & Frick, K. D. (2004). A Review of Health-Related Workplace Productivity Loss Instruments. *PharmacoEconomics*, 22(3), 165–184.
<https://doi.org/10.2165/00019053-200422030-00003>
- Lofors, J., & Sundquist, K. (2007). Low-linking social capital as a predictor of mental disorders: A cohort study of 4.5 million Swedes. *Social Science & Medicine* (1982), 64(1), 21–34. <https://doi.org/10.1016/j.socscimed.2006.08.024>
- McCarron, R.M, Shapiro, B., Rawles, J., & Luo, J. (2021). Depression. *Annals of Internal Medicine*, 174(5), ITC65–ITC80. <https://doi.org/10.7326/AITC202105180>
- McIntyre, R. S., Cha, D. S., Soczynska, J. K., Woldeyohannes, H. O., Gallagher, L. A., Kudlow, P., Alsuwaidan, M., & Baskaran, A. (2013). COGNITIVE DEFICITS AND FUNCTIONAL OUTCOMES IN MAJOR DEPRESSIVE DISORDER:

DETERMINANTS, SUBSTRATES, AND TREATMENT INTERVENTIONS.

Depression and Anxiety, 30(6), 515–527. <https://doi.org/10.1002/da.22063>

McKee-Ryan, F. M., Song, Z., Wanberg, C. R., & Kinicki, A. J. (2005). Psychological and Physical Well-Being During Unemployment. *Journal of Applied Psychology*, 90(1), 53–76. <https://doi.org/10.1037/0021-9010.90.1.53>

Moscarello, J. M., & Hartley, C. A. (2017). Agency and the Calibration of Motivated Behavior. *Trends in Cognitive Sciences*, 21(10), 725–735. <https://doi.org/10.1016/j.tics.2017.06.008>

Murphy, G. C., & Athanassou, J. A. (1999). The effect of unemployment on mental health. *Journal of Occupational and Organizational Psychology*, 72(1), 83–99. <https://doi.org/10.1348/096317999166518>

NAV. (2022.26.08). Sykefraværstatistikk – Årsstatistikk. [online]. NAV: Arbeids- og velferdsetaten. Last updated March 16, 2023, retrieved May 14, 2023 from <https://www.nav.no/no/nav-og-samfunn/statistikk/sykefravar-statistikk/sykefravaersstatistikk-arsstatistikk>

Norwegian Institute of Public Health. Public Health Report: Health Status in Norway 2018. Oslo: Norwegian Institute of Public Health, 2018.

Odden, R., & Universitetet i Tromsø (2013). The association between socioeconomic status and mental health = Sammenhengen mellom sosioøkonomisk status og psykisk helse. [Master's thesis]. Universitetet i Tromsø.

Olsen, K. & Cekov, D. (2023). Norway: Stagnation. *Nordea Economic Outlook: The Balancing Act*, 2023(1), 20-23.

O'Reilly, J., Robinson, S. L., Berdahl, J. L., & Banki, S. (2015). Is Negative Attention Better Than No Attention? The Comparative Effects of Ostracism and Harassment at Work. *Organization Science* (Providence, R.I.), 26(3), 774–793.

<https://doi.org/10.1287/orsc.2014.0900>

Pan, Z., Park, C., Brietzke, E., Zuckerman, H., Rong, C., Mansur, R. B., Fus, D., Subramaniapillai, M., Lee, Y., & McIntyre, R. S. (2019). Cognitive impairment in major depressive disorder. *CNS Spectrums*, 24(1), 22–29.

<https://doi.org/10.1017/S1092852918001207>

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74(3), 264–282.

<https://doi.org/10.1016/j.jvb.2009.01.001>

Robinson, S. L., O'Reilly, J., & Wang, W. (2013). Invisible at Work. *Journal of Management*, 39(1), 203–231. <https://doi.org/10.1177/0149206312466141>

Rotenstein, L. S., Torre, M., Ramos, M. A., Rosales, R. C., Guille, C., Sen, S., & Mata, D. A. (2018). Prevalence of Burnout Among Physicians: A Systematic Review. *JAMA : the Journal of the American Medical Association*, 320(11), 1131–1150.

<https://doi.org/10.1001/jama.2018.12777>

Ruths, S., Haukenes, I., Hetlevik, Ø, Smith-Sivertsen, T., Hjørleifsson, S., Hansen, A. B., Riiser, S., Meling, H. M., & Baste, V. (2021). Trends in treatment for patients with depression in general practice in Norway, 2009–2015: nationwide registry-based cohort study (The Norwegian GP-DEP Study). *BMC Health Services Research*, 21(1), 1–697. <https://doi.org/10.1186/s12913-021-06712-w>

Schacter, H. L., & Margolin, G. (2019). When It Feels Good to Give: Depressive Symptoms, Daily Prosocial Behavior, and Adolescent Mood. *Emotion (Washington, D.C.)*, 19(5), 923–927. <https://doi.org/10.1037/emo0000494>

- Schonfeld, I. S., & Bianchi, R. (2021). From Burnout to Occupational Depression: Recent Developments in Research on Job-Related Distress and Occupational Health. *Frontiers in Public Health*, 9, 796401–796401. <https://doi.org/10.3389/fpubh.2021.796401>
- Sofield, L., & Salmond, S. W. (2003). Workplace violence. A focus on verbal abuse and intent to leave the organization. *Orthopaedic Nursing*, 22(4), 274–283. <https://doi.org/10.1097/00006416-200307000-00008>
- Sulea, C., Filipescu, R., Horga, A., Ortan, C., & Fischmann, G. (2012). Interpersonal mistreatment at work and burnout among teachers. *Cogniție, Creier, Comportament*, 16(4), 553–570.
- Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2002). Social Exclusion Causes Self-Defeating Behavior. *Journal of Personality and Social Psychology*, 83(3), 606–615. <https://doi.org/10.1037/0022-3514.83.3.606>
- WHO, 2008. The Global Burden of Disease: 2004 Update. WHO.
- Willner, P., Scheel-Krüger, J., & Belzung, C. (2013). The neurobiology of depression and antidepressant action. *Neuroscience and Biobehavioral Reviews*, 37(10), 2331–2371. <https://doi.org/10.1016/j.neubiorev.2012.12.007>
- Williams, K. D. (2001). *Ostracism: The power of silence*. New York: Guilford Press.
- Williams, K.D. (2009). Chapter 6 Ostracism: A Temporal Need-Threat Model. *Advances in Experimental Social Psychology*, 41, 275-314.
- Wittchen, H.-U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe—a critical review and appraisal of 27 studies. *European Neuropsychopharmacology*, 15(4), 357–376. <https://doi.org/10.1016/j.euroneuro.2005.04.012>

Working Environment Act. (2006). *Act relating to working environment, working hours and employment protection, etc.* (LOV-2005-06-17-62).

<https://lovdata.no/dokument/NLE/lov/2005-06-17-62>

Xia, A., Wang, B., Song, B., Zhang, W., & Qian, J. (2019). How and when workplace ostracism influences task performance: Through the lens of conservation of resource theory. *Human Resource Management Journal*, 29(3), 353–370.

<https://doi.org/10.1111/1748-8583.12226>

Yamagishi, T. (2011). *Trust: The Evolutionary Game of Mind and Society* (1. Aufl.). Tokyo: Springer-Verlag.

Zhang, Y., Su, D., Chen, Y., Tan, M., & Chen, X. (2022). Effect of socioeconomic status on the physical and mental health of the elderly: the mediating effect of social participation. *BMC Public Health*, 22(1), 605–605.

<https://doi.org/10.1186/s12889-022-13062-7>

