

# Does dispositional optimism moderate the relationship between role conflict and risk of disability retirement?

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**Abstract:** This study determines whether dispositional optimism moderates the relationship between role conflict and the risk of disability retirement. The study was based on a combination of self-report survey questionnaire data on role conflict and dispositional optimism with official register data on disability benefits from the Norwegian Labour and Welfare Administration. The sample comprised 14,501 Norwegian employees from various occupations and industries. Role conflict was significantly related to higher risk (HR 1.35, 95% CI 1.19–1.53), whereas optimism was associated with decreased risk (HR 0.75, 95% CI 0.64–0.88), of disability retirement. Optimism did not modify the effect on role conflict on disability retirement. Having an optimistic life orientation decreases the risk of disability retirement in general, but does not protect against the detrimental effects of role conflict at the workplace. As optimism is a malleable personality characteristic, organizations may benefit from interventions that help employees experience daily events more positively.

**Key words:** Workability, Health, Role stress, Personality, Work exposures

In 2017, 9.5 percent of the Norwegian adults between 18 and 67 yr received disability benefits<sup>1</sup>. A high prevalence of disability pensioners have extensive costs for the individual, organizations, and the society. Psychiatric problems are the most frequent cause of disability retirement for persons below 55 yr, while musculoskeletal disorders are the most frequent cause for those above 55 yr<sup>1</sup>. Specific psychological and social work factors may be independent contributors to both the risk of disability retirement and the health impairments that lead to disability<sup>2</sup>. In a recent a registry based primary study, role conflict was established as a particularly important work-related risk factor<sup>3</sup>. Role conflict refers to incongruence between differing expectations, either associated with

one's job role, different roles within a work context, or between job requirements and the employee's opinions and ideals pertaining to how the job should be executed<sup>4</sup>.

Following the transactional model of stress and coping, the ability to cope with exposure to role conflict is determined by two consecutive appraisal processes<sup>5</sup>. In the primary appraisal process, the experience of role conflict is cognitively evaluated for its potential for harm or loss. If the employee perceives the situation as threatening, a secondary appraisal process is initiated, centering on whether one has available options or enough resources to meet the situational demands to prevent threat of harm or loss. If individuals perceive that the challenge of the situation is taxing or exceeding the available options and resources, the model proposes that individuals experience strain<sup>5</sup>. Strain over an extended time-period will manifest itself through psychological distress (e.g., anxiety, depression, exhaustion), which again can develop into somatic

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complaints and disorders.

A number of empirical studies have demonstrated that the ability to cope with work related stress is determined by personality factors<sup>6</sup>). Dispositional optimism, the expectation that more good and desirable things will happen than bad things will happen to us in the future<sup>7</sup>), seems to be an especially important factor with regard to the impact of work exposure on health and workability. In a study by Carver, Scheier, and Weintraub<sup>8</sup>), dispositional optimism was related to almost all examined indicators of coping with the direction of the associations suggesting that optimism underlies several aspects of effective coping. A positive life orientation is beneficial to health and optimistic people have been found to experience daily events in a more positive way than pessimists<sup>9</sup>). In a longitudinal study it was found that increases in optimism over a four-year period were associated with improvements in self-rated health and fewer chronic illnesses over the same time frame<sup>10</sup>). Hence, it is likely that optimistic employees will react differently to role conflict compared to colleagues with a more negative life-orientation.

While both role conflict and dispositional optimism are likely antecedents to disability retirement, few studies have examined their potential interactive effects. As illustrated by the transactional model of stress and coping, strain depends not only on the person or the environment alone, but rather the transaction between the two levels and it is therefore reasonable to assume an interaction between exposure and personality. This study will therefore test whether dispositional optimism moderates the relationship between role conflict and the risk of disability retirement. Based on the above reasoning, we hypothesize that, due to their positive approach to life events, optimistic workers are less likely than pessimistic workers to enter disability retirement following exposure to role conflict.

This study is a part of the research project «The new workplace II: work factors, sickness absence, and exit from working life among Norwegian employees». The research project is fully described in the study protocol<sup>11</sup>). A questionnaire survey combined with official registry data comprises the basis of the project. The survey part includes data from a large sample of Norwegian adults employed in full-time or part-time position. Subjects were recruited from organizations in Norway that were contacted and invited to participate in the study. The organizations represented a wide range of occupational sectors. All employees, excluding those on sick leave, were invited to participate and received a letter with information about the purpose of the study, about the strict confidential-

ity guidelines, and about the license for data collection granted by the Norwegian Data Inspectorate. Data were collected from 1 November 2004 to 15 December 2014. A total of 31,823 employees, aged 18 to 62 yr old from 97 companies were invited to participate in the survey. Subjects above 62 yr old were excluded as they are additionally entitled to early age pension. Altogether 15,282 persons responded (response rate: 48%) and 14,501 (95%) respondents permitted linking the survey questionnaire to registry data. The final cohort comprised 12,303 subjects.

The project was approved by the Regional Committees for Medical and Health Research Ethics in Norway, has permission from the Norwegian Data Protection Authority, and was conducted in accordance with the World Medical Association Declaration of Helsinki. All participants provided informed consent. Respondents were treated confidentially. Only participants who permitted linkage to registries are included in this study.

Information on disability retirement was provided by the Norwegian Labor and Welfare Administration and linked to the survey by the unique 11-digit national identity number. The registers provide complete information on disability retirement which are compensated by the national insurance sickness benefit. To be entitled to disability benefit one must be between 18 and 67 yr old, be a member of the national insurance scheme in the last three yr before illness and/or injury and the earning capacity must be permanently reduced by at least 50% certified by a medical doctor. This study includes information on disability pension compensation up to 1 January 2015.

Questionnaire data were measured at baseline. The generalized expectation of positive rather than negative outcomes in life, dispositional optimism (Cronbach's alpha=0.59; mean intra item correlation=0.33), was measured with three items from the "Revised Life Orientation Test" LOT-R<sup>12</sup>). Response categories for LOT-R ranged from 1= "Strongly disagree" to 5= "Strongly agree". Role conflict (Cronbach's alpha=0.70; mean intra item correlation=0.40) was measured with a 3-items scale from the General Nordic Questionnaire for Psychological and Social Factors at Work QPSNordic<sup>13</sup>). The items cover aspects of work that you feel should be done differently, given assignments without adequate resources to complete them and receiving incompatible requests from two or more people. Response categories ranged from 1= "very rare/seldom or never" to "very often or always".

Statistical analyses were conducted with STATA version SE/ 14.2 (StataCorp LLC, College Station, Texas, USA). Hazard ratios (HR) and 95% confidence interval (95%

**Table 1. Descriptive statistics and bivariate associations between gender, educational level, optimism and role conflict as predictor variables and registry based all-cause disability retirement as outcome using Cox-regression (12 303)**

	%	Mean	SD	HR	95% CI
Gender (female) <sup>a</sup>	55.4	--	--	3.35 <sup>b</sup>	2.70–4.15
Education (yr)					
<9 (reference)	3.6	--	--	--	--
10–12	31.8	--	--	0.56 <sup>b</sup>	0.40–0.77
13–16	44.2	--	--	0.47 <sup>b</sup>	0.34–0.65
>16	20.4	--	--	0.23 <sup>b</sup>	0.15–0.36
Dispositional optimism	--	3.59	0.62	0.80 <sup>b</sup>	0.70–0.92
Role conflict <sup>c</sup>	--	2.55	0.79	1.25 <sup>b</sup>	1.12–1.39

<sup>a</sup>Male gender is reference category, <sup>b</sup> $p < 0.001$ , <sup>c</sup>Response scale: 1–3.

SD: standard deviation; HR: hazard ratio; 95% CI: 95% confidence interval.

CI) were calculated with Cox regression. Attained age (at censoring/event) was the underlying time scale in the analyses, as recommended for studies in healthy populations, and made age adjustment redundant<sup>14</sup>). Gender and education were included as covariates.

Descriptive statistics and bivariate association are presented in Table 1. Mean age was 41.79 (SD: 10.23; Range: 18–62). Women constituted the majority of the sample (55.4%). Altogether 4.4% (N=546) of the sample entered the disability retirement scheme during the study period, women accounting for 424 recipients. The bivariate associations showed that higher level of optimism, male gender, and higher educational level protected significantly against disability pension. Higher levels of role conflict increased the risk for disability pension.

Stepwise multivariate cox-regression analyses in the total sample and gender specific analyses, are presented in Table 2. In the total sample (HR 0.75, 95% CI 0.64–0.88) and in women (HR 0.80, 95% CI 0.70–0.96) and men (HR 0.54, 95% CI 0.36–0.79), optimism was related to significantly decreased risk of disability retirement. There was no significant gender difference in the magnitude of the association between optimism and disability retirement. Role conflict was significantly related to higher risk of disability retirement in the whole sample (HR 1.35, 95% CI 1.19–1.53) and in the female subsample (HR 1.37, 95% CI 1.19–1.57), but not in the male subsample (HR 1.26; 95% CI 0.95–1.68). This gender difference was not statistical significant. Risk for disability retirement was reduced with increasing educational level among women, but not among men. However, the difference between men and women in magnitude of the associations was insignificant. The interaction term between optimism and role conflict was added to the regression in the third step. This interaction

term was insignificant in the total sample, as well as for women and men, indicating that optimism did not modify the effect on role conflict on disability retirement.

Our results showed that female gender, educational level, and role conflicts were significant predictors of later disability retirement. In addition, we found a significant direct protective effect of optimism on disability retirement. Optimism did not moderate the association between role conflict and disability retirement. Hence, employees with an optimistic view of life have a lower risk of disability retirement in general, but optimism does not protect against the impact of role conflict on disability retirement. These findings applies to both women and men. An explanation for the non-significant effect of dispositional optimism on role conflict is that role conflict is a long lasting and persistent exposure that is likely to have an external locus of control and thereby only can be resolved by factors outside the person (e.g., leadership). Hence, after prolonged exposure, there will be a discrepancy between expectations that the problem will be resolved and the actual situation, something which may attenuate the benefits of having an optimistic view of life.

Optimism has been described as a trait-like, but at least partly malleable<sup>10, 15</sup>, personality characteristic that can be developed and trained<sup>9</sup>). Optimism is a mental attitude that strongly influences everyday social and working life<sup>16</sup>). This implies that a more pessimistic person may be trained to be more optimistic, in a realistic and flexible manner, and thus it is possible to help prevent disability retirement. An optimistic person is likely to last longer in a job and possible disability retirement will probably come later.

Risk for disability retirement was reduced with increasing educational level among women, but not among men, thus indicating that educational level could be a protective

**Table 2. Gender, educational level, optimism and role conflict as predictors of disability retirement in total sample, and in women and men separately with age at inclusion as time-dependent variable in the Cox-regression**

Variables	Total sample		Women		Men	
	HR	95% CI	HR	95% CI	HR	95% CI
Step 1						
Gender (female) <sup>a</sup>	3.00 <sup>b</sup>	2.33–3.86	--	--	--	--
Education year						
<9 yr (reference)	--	--	--	--	--	--
10–12 yr	0.64 <sup>c</sup>	0.46–0.89	0.61 <sup>c</sup>	0.43–0.86	0.99	0.35–2.81
13–16 yr	0.55 <sup>b</sup>	0.39–0.76	0.51 <sup>b</sup>	0.36–0.72	0.91	0.32–2.55
>16 yr	0.29 <sup>b</sup>	0.19–0.46	0.32 <sup>b</sup>	0.20–0.52	0.27	0.07–1.01
Dispositional optimism	0.75 <sup>b</sup>	0.64–0.88	0.80 <sup>b</sup>	0.70–0.96	0.54 <sup>d</sup>	0.36–0.79
Step 2						
Gender (female) <sup>a</sup>	3.17 <sup>b</sup>	2.46–4.10	--	--	--	--
Education year						
<9 yr (reference)	--	--	--	--	--	--
10–12 yr	0.60 <sup>c</sup>	0.43–0.83	0.57 <sup>c</sup>	0.40–0.81	0.94	0.33–2.67
13–16 yr	0.50 <sup>b</sup>	0.36–0.70	0.46 <sup>b</sup>	0.32–0.66	0.88	0.31–2.49
>16 yr	0.27 <sup>b</sup>	0.17–0.42	0.28 <sup>b</sup>	0.17–0.46	0.27 <sup>d</sup>	0.07–1.00
Dispositional optimism	0.77 <sup>c</sup>	0.65–0.91	0.82 <sup>d</sup>	0.68–0.98	0.57 <sup>d</sup>	0.38–0.84
Role conflict	1.35 <sup>b</sup>	1.19–1.53	1.37 <sup>b</sup>	1.19–1.57	1.26	0.95–1.68
Step 3						
Gender (female) <sup>a</sup>	3.17 <sup>b</sup>	2.46–4.09	--	--	--	--
Education year						
<9 (reference)	--	--	--	--	--	--
10–12 yr	0.60 <sup>c</sup>	0.43–0.83	0.57 <sup>c</sup>	0.40–0.81	0.95	0.33–2.71
13–16 yr	0.50 <sup>b</sup>	0.36–0.70	0.46 <sup>b</sup>	0.32–0.66	0.89	0.31–2.50
>16 yr	0.27 <sup>b</sup>	0.17–0.42	0.28 <sup>b</sup>	0.17–0.46	0.27 <sup>d</sup>	0.07–1.00
Dispositional optimism	0.71	0.42–1.19	0.81	0.46–1.44	0.28	0.07–1.12
Role conflict	1.21	0.62–2.36	1.36	0.64–2.88	0.55	0.11–2.79
Interaction term <sup>e</sup>	1.03	0.86–1.24	1.00	0.81–1.23	1.23	0.80–2.10

<sup>a</sup>Male gender is reference category, <sup>b</sup> $p < 0.001$ , <sup>c</sup> $p < 0.01$ , <sup>d</sup> $p < 0.05$ , <sup>e</sup>Dispositional optimism \*Role conflict.  
 HR: hazard ratio; 95% CI: 95% confidence interval.

factor with regard to disability retirement for female employees. However, the differences in impact of educational level between men and women were insignificant. As the study comprised more women than men on disability retirement, this finding may therefore simply due to methodological factors such as differences in group size.

Strengths of this study are the prospective design, large sample size, psychometrically sound instruments, and official registry data on disability retirement. The use of self-report instruments to measure optimism and role conflict may introduce bias and the results should therefore be interpreted with caution. The population studied was not randomly sampled, something which could limit the external validity of the study. Although we adjusted for age of respondents by using attained age as an underlying time-variable in the analyses, there may be other cohort-

related differences in the associations of optimism and role conflict with disability that we did not account for. Although there was a time-lag between predictor variables and the outcome, this study was not fully longitudinal. Future research should therefore replicate this study with multiple assessments of role conflict and optimism in order to provide stronger tests of the associations.

Although optimism does not buffer the impact of role conflict on disability retirement, optimism has a direct protective effect on disability retirement in general among both women and men. As optimism is a considered as a malleable personality characteristic, organizations may benefit from interventions that help employees experience daily events in a more positive way.

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