

Measuring Workplace Bullying: Reliability and Validity of the Japanese Version of the Negative Acts Questionnaire

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Abstract: Measuring Workplace Bullying: Reliability and Validity of the Japanese Version of the Negative Acts Questionnaire: Kanami Tsuno, et al. Japan Society for the Promotion of Science—

Objectives: Workplace bullying is increasingly being recognized as a serious problem within the work environment. Previous studies in European countries have reported the prevalence of workplace bullying and its association with poor mental health, using the Negative Acts Questionnaire-Revised (NAQ-R: Einarsen & Hoel, 2001), but there have been very few studies in Japan. The authors translated the 22-item NAQ-R into the Japanese language and examined the internal consistency reliability and concurrent and construct validity, including factor-based validity, of this scale in a sample of Japanese civil servants. **Methods:** A total of 830 males and 796 females were surveyed, using anonymous questionnaires including the NAQ-R, Leymann Inventory of Psychological Terror (LIPT), and scales for interpersonal relations at work and psychological distress (response rate, 46.7%). **Results:** Cronbach's alpha coefficients of the internal consistency reliability of the NAQ-R were high (0.91–0.95) for males and females. Workplace bullying measured by the NAQ-R was strongly associated with that measured by the LIPT and other scales on workplace bullying. The NAQ-R was associated with high psychological distress, high intragroup and intergroup conflict, low supervisor and coworker support, and low interactional justice, as expected. Although three factors were extracted, this findings differed slightly from the factor structure previously reported (Einarsen *et al.*, 2009). However, Factor 1 explained most of the variance, indicating that a one

factor structure fitted the data better. **Conclusion:** The present study showed acceptable levels of reliability and validity of the Japanese version of the NAQ-R among Japanese civil servants.

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Key words: Cross-sectional study, Harassment at work, Mobbing, Prevalence, Scale development, Workplace bullying

Workplace bullying is increasingly recognized as a serious problem within the work environment. The concept of workplace bullying, sometimes referred to as workplace harassment¹, or workplace abuse², was described by the Swedish researcher Heinz Leymann for the first time in 1984; he named this phenomenon “mobbing” or “psychological terror³”. Leymann³ defined workplace bullying as hostile and unethical communication that occurs on a very frequent basis (statistical definition: at least once a week) and over a long period of time (statistical definition: at least six months of duration). Following Leymann definition, Einarsen *et al.*⁴ proposed a slightly different definition, with less strict criteria for the frequency and duration, and nowadays this has been widely employed in the literature.

Until now, especially in European countries, many researchers have reported the prevalence of bullying at work. For instance, 3.6–16% of the workforce in Europe is found to be exposed to some kind of bullying at the workplace weekly or more^{3, 5–9}. At the same time, research has shown that bullying at work positively associated with health outcomes: depressive symptoms¹⁰, post-traumatic stress disorder symptoms¹¹, psychological and psychosomatic health complaints¹², newly diagnosed fibromyalgia¹³, and use of sleep-inducing drugs¹⁴. It has also been related to staff turnover and cases of sick leave^{15, 16}.

Generally, researchers have employed one or two different method(s) to assess the prevalence of bullying. One method, which might be termed a “subjective”

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method¹⁷), requires respondents to indicate whether they feel exposed to bullying at work, on the basis of the definition of workplace bullying. The other method, the “operational” method, measures the frequency at which respondents have been subjected to various types of negative acts during the previous six months. This method does not require the respondents to label these behaviors as bullying, which appears less likely to prompt the respondent’s cognitive or emotional processing¹⁸. For this reason, the authors decided to use the operational method mainly in this study.

To measure workplace bullying with the “operational” method, two measures have been used most widely in research. One is the Leymann Inventory of Psychological Terror (LIPT)³, which comprises 45 categories of acts of bullying. The LIPT was designed as a diagnostic tool to identify victims of severe bullying who are likely to be traumatized from their experience, based on the Leymann definition. This scale evaluates the 12-month prevalence of exposure to 45 forms of bullying. The other scale is the Negative Acts Questionnaire (NAQ)⁶ and its revised version (Negative Acts Questionnaire-Revised: NAQ-R)^{19, 20}, both of which consist of 22 items of negative acts. The NAQ is based on the definition of Einarsen *et al.* and was created as a survey instrument with the aim of establishing a reliable, valid, comprehensive, yet relatively short scale for use in a variety of occupational settings²¹. It has now been used in about 40 countries. A later version of NAQ, i.e., the NAQ-R^{19, 20}, which was developed and refined based on the original scale^{6, 18, 22}, initially included 29 items describing negative acts that were personal as well as work-related^{20, 23}; later, the number of the items reduced to 22^{8, 19}.

In studies in Norway, the NAQ-R has been shown to have acceptable internal consistency reliability (Cronbach’s alpha coefficient ranged from 0.88–0.90)^{8, 24}. Additionally, it has been reported that high scores on the NAQ-R were correlated with poor mental health, high psychosomatic complaints, low performance, increased sickness absenteeism, and greater inclination to leave one’s job²¹. A previous study also reported that the NAQ-R correlated with high work pressure from workload, poor organizational climate, negative relationships with colleagues, low organizational commitment, and low organizational satisfaction²¹. Although other scales have been developed to measure workplace bullying^{25, 26}, most have been used in only a limited number of studies⁴¹ or their validity and reliability are unknown²⁵.

The NAQ-R shows high internal consistency and construct validity; however, its psychometric property has been tested only within European countries. In Japan, social concern about workplace bullying has increased since a Tokyo District Court judged an employee’s depression and suicide, caused by his superior’s bullying, as an occupational injury in October 2007. However,

there are very few studies that have reported the prevalence of workplace bullying and its impact on health in Japan^{27, 28}, which is partly attributable to a lack of scientifically-valid measurements of workplace bullying in Japan. While a Japanese version of the NAQ⁶ has been developed²⁸, the Bergen Bullying Research Group, a research team at the University of Bergen in Norway that distributes and promotes the NAQ and NAQ-R, now recommends the use of NAQ-R, instead of NAQ (Nielsen, personal communication). The Japanese version of the NAQ-R was developed as a doctoral thesis²⁷, but the translated scale was designed specially for nurses and can not be used for the general working population. Japan and other Asian countries have distinct features of workplace structure, being more vertical, collective, and hierarchy-oriented²⁹ than in European countries³⁰, which could result in a greater prevalence of workplace bullying. Also, patterns of workplace bullying may be different among countries, as suggested by different factor structures of the NAQ found among studies^{6, 18}. The development of a new Japanese version of the NAQ-R for the general working population would contribute not only to research on workplace bullying in Japan, but also to the global understanding of this psychosocial hazard at work.

The authors developed a Japanese version of the NAQ-R for the general working population, revising the previous Japanese version of NAQ-R for nurses²⁷. The purpose of this study was to examine the internal consistency reliability and concurrent and construct validity, including factor-based validity, of this scale using a sample of Japanese civil servants.

Participants and Methods

Participants

A cross-sectional study was conducted of civil servants at seven workplaces consisting of six city offices and one other civil service office of local governments in the Kanto region in Japan in March 2009. A total of 4,072 anonymous questionnaires were distributed through labor unions, with a letter describing the aims and procedure of the study assuring that the survey was anonymous and no individual would be identified in analyzing and reporting the data. A total of 2,194 questionnaires were returned sealed in envelopes, providing a response rate of 46.7%. After excluding employees who had at least one missing entry in the questionnaire, the final number of respondents including the analysis was 1,626 (830 males and 796 females). The study procedure was approved by the Ethics Committees of the Graduate School of Medicine, The University of Tokyo.

Measurements

Japanese version of the NAQ-R

The NAQ-R^{8, 19} has 22 items, measuring how often during the previous six months respondents have been

subjected to various negative acts, which when occurring on a frequent basis might be considered as bullying¹⁸. All items in the NAQ-R are described without reference to the word “bullying” or “harassment”. This has the advantage of letting the participants respond to each item without having to label and identify it as bullying before answering³¹. The NAQ-R contains items referring to personal bullying, work-related bullying, and physical intimidation behaviors²¹. Response categories are: “Never,” “Now and then,” “Monthly,” “Weekly,” and “Daily” (range, 1–5). In the present study, a sum-scale of the NAQ-R was used in the statistical analyses of the relationships between exposure to bullying behaviors and interpersonal relations at work and psychological distress. In this study, weekly or more exposure to at least one negative act for the previous six months, according to the “operational” criteria put forward by Leymann³, was defined as bullying.

Also, “subjective” criteria based on a single item from the NAQ-R were used. In the NAQ-R, the employees were asked a question after being given the following definition of bullying: “We define bullying as a situation where one or several individuals persistently over a period of time perceive themselves to be on the receiving end of negative acts from one or several persons, in a situation where the target of bullying has difficulty in defending him or herself against these acts. We will not refer to a one-off incident as bullying.” The employees were asked whether or not they perceived themselves as being bullied within the past six months. Response categories are: “No,” “Yes, but only rarely,” “Yes, now and then,” “Yes, several times a week,” and “Yes, almost daily.” Those who answered “yes” to this question were categorized as self-labeling of victims of bullying at work (NAQ-R ver.) in this study as well as previous studies^{7,8}.

The English version of the NAQ-R was translated into Japanese and modified, using plain Japanese language expressions, by the authors. Then, the first translated version was tested with a group of nine occupational health staff (i.e., industrial physicians, occupational health nurses, and clinical psychologists) to receive their feedback, and revised accordingly.

In addition, the second version was back-translated and sent to the Bergen Bullying Research Group whose feedback led to a small amendment to one item of the Japanese NAQ-R of the second version (the item #17, “Having allegations made against you”). In the second version, the word “allegations” was translated as “suspicion,” which has a different meaning than the original version. In the final version, the word was translated as “blame.” While the amendment might have a small influence on the properties of the scale, it might affect the results of the structure of the scale to some extent. The back-translated NAQ-R was exactly the same as the original version. This revised final version of the

NAQ-R was used in the present study (see Appendix).

Other Measures

1) LIPT for workplace bullying

To test the construct validity of the NAQ-R, another scale of workplace bullying was also measured: the French version of the LIPT³ has 45 items measuring the experience of bullying within the previous 12 mo, with a two-point response option (0=no; 1=yes). The frequency and duration of bullying were both assessed by one question, also used by Leymann³. To measure exposure to bullying operationally, the Leymann definition, i.e., exposure to at least one form of bullying within the previous 12 mo, weekly or more, and for at least six months, was also used. At the same time, a total score of 45 items of the LIPT was calculated as an indicator of workplace bullying. This scale was translated into Japanese and modified in the same manner as the Japanese version of the NAQ-R. Also, an alternative subjective criterion of bullying based on a single-item from the LIPT was used. In the LIPT, the employees were asked a question after being given the following definition of bullying: “Bullying may be defined by a situation in which someone is exposed to hostile behavior on the part of one or more persons in the work environment which aim continually and repeatedly to offend, oppress, maltreat, or to exclude or isolate over a long period of time.” The employees were asked whether or not they perceived themselves as being exposed to bullying within the past 12 mo. Response categories were “yes” and “no.” Those who endorsed this question were categorized self-labeling of victims of bullying at work (LIPT ver.) in this study.

2) Psychological distress

Psychological distress was measured by the Japanese version of the K6 scale³² which consists of six items asking how frequently respondents have experienced symptoms of psychological distress during the past 30 days.

3) Interactional justice

Interactional justice was measured by the Japanese version of the Organizational Justice Questionnaire^{33–35}, which includes six items assessing the degree of fairness and consideration for subordinate workers in the behavior of the respondent’s supervisor at work. The total score for this scale was calculated by averaging item scores.

4) Intragroup and intergroup conflict

Intragroup and intergroup conflict were measured by the shortened Japanese version of the Scales of Interpersonal Conflict at Work³⁶, which was adapted from the National Institute for Occupational Safety and Health Generic Job Stress Questionnaire (NIOSH-GJSQ).

5) Worksite social support

Worksite social support was measured by the Japanese version of the Job Content Questionnaire (JCQ)³⁷, which

includes questions about worksite support from supervisors and co-workers.

6) Demographic variables

Demographic and occupational variables were assessed by a questionnaire developed by the authors. The demographic variables included sex and age; occupational variables included occupational status (manager, white-collar worker, blue-collar worker, human service worker, or others) and employment contract (regular, contingency, or part-time).

Statistical analysis

In order to know the sex difference in the scores of the NAQ-R, the average scores, as well as those of the other scales and distributions of demographic variables, were compared by sex. To examine internal consistency reliability, Cronbach's alpha coefficient was calculated for the Japanese version of the NAQ-R. To test structural validity, all 22 items were entered into an exploratory factor analysis, using the maximum likelihood method. In the exploratory factor analysis, factors with eigenvalues of more than 1.0 were extracted and the promax rotation method was used to obtain factor structures. Based on earlier research and theoretical notions²¹⁾, three underlying factors were expected: person-related bullying, work-related bullying, and physical intimidation. Also, previous studies reported a one-factor model and a two-factor model (a person-related bullying and a work-related bullying)¹⁹⁾. In this study, the authors tested a one-factor model (Model 1), a two-factor model (Model 2), and a three-factor model (Model 3). Model fit was assessed using a combination of fit indices including the goodness of fit index (GFI), the adjusted goodness fit index (AGFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). The acceptability of model fit was judged by the following criteria: GFI, AGFI, and CFI > 0.90 and RMSEA < 0.05³⁸⁾.

To assess construct validity, Pearson's correlation coefficients were calculated between the total score of the NAQ-R and three groups of variables: indicators of bullying (the number of bullying behaviors measured by the LIPT, and self-labeling as a victim of bullying measured by LIPT and NAQ-R), interpersonal relations at work (intragroup conflict, intergroup conflict, supervisor support, co-worker support, and interactional justice), and psychological distress. These variables were also compared between participants who had experienced at least one negative act weekly or daily and of monthly or less, using *t*-test and ANCOVA. The score and classification base on the NAQ-R were reasonably expected to be positively associated with the other indicators of bullying and with psychological distress¹⁰⁻¹²⁾. Intragroup conflict and intergroup conflict were expected to be positively associated with the NAQ-R indicators, because workplace bullying is an exaggerated form of interpersonal conflict³⁾;

supervisor support, co-worker support, and interactional justice were expected to be negatively associated with the NAQ-R indicators, because victims of workplace bullying could have a lowered perception of receiving social support from workplace members and particularly of being fairly treated by a supervisor, as interactional injustice was found to be the strongest predictor of aggression among the factor of organizational injustice^{39,40)}. The level of significance used was 0.05 (two-tailed). SPSS 17.0J and Amos 16.0J for Windows were used for the statistical analyses.

Results

Characteristics of respondents

Table 1 shows the respondents' characteristics and average scores on each scale. Of the respondents, 51.0% were male and 49.0% were female.

Reliability of the NAQ-R

Cronbach's alpha coefficients of the internal consistency reliability of the NAQ-R were 0.95 and 0.91 for males and females, respectively (Table 1).

Factor structure of NAQ-R

The exploratory factor analysis yielded a three-factor model (hereafter referred to as Model 4), which consisted of a different factor-structure from models previously reported (Table 2). Eight of the twelve items for person-related bullying and six of eight items for work-related bullying showed the greatest factor loading on Factor 1. Factor 2 consisted of some items of person-related bullying (two items) and physical intimidation bullying (one item). Factor 3 consisted of two items mainly concerning assignment of work with lower responsibility and competence.

The confirmatory factor analysis showed non-optimal fits for all of the models (GFI=0.83 for Model 1, 0.86 for Model 2, 0.84 for Model 3, and 0.86 for Model 4; AGFI=0.80 for Model 1, 0.83 for Model 2, 0.81 for Model 3, and 0.83 for Model 4; CFI=0.84 for Model 1, 0.87 for Model 2, 0.85 for Model 3, 0.87 for Model 4; and RMSEA=0.096 for Model 1, 0.089 for Model 2, 0.094 for Model 3, and 0.087 for Model 4).

Concurrent and constructive validity of the NAQ-R

As shown in Table 3, higher levels of NAQ-R score were positively and significantly correlated with self-labeling as a victim of workplace bullying as measured by the NAQ-R and LIPT, the number of bullying behaviors measured by the LIPT, intragroup and intergroup conflict, and psychological distress ($p < 0.001$). Higher levels of NAQ-R score were also negatively and significantly correlated with supervisor and co-worker support, and interactional justice ($p < 0.001$).

Table 4 shows that participants who had experienced more than one of the 22 negative acts listed in the NAQ-

Table 1. Distribution of demographic characteristics, workplace bullying, interpersonal relations at work, and psychological distress among civil servants who participated in the study by sex (N=1,626)

	Male (N=830)		Female (N=796)		<i>p</i> ‡
	Average (SD) †	n (%)	Average (SD) †	n (%)	
Age (years)	43.0 (9.8)		42.1 (10.7)		0.072
Occupational status					<0.001
Manager		93 (11.2)		27 (3.4)	
White-collar		540 (65.1)		223 (28.0)	
Blue-collar		152 (18.3)		99 (12.4)	
Human service workers		29 (3.5)		396 (49.7)	
Others		16 (1.9)		51 (6.4)	
Employment contract					<0.001
Regular employment		822 (99.0)		753 (94.6)	
Contingency/part-time worker		8 (1.0)		43 (5.4)	
Scale scores (possible range) §		Cronbach's α		Cronbach's α	
Workplace bullying (NAQ-R: 23–115)	25.6 (8.3)	0.95	25.3 (6.4)	0.91	0.520
Workplace bullying (LIPT: 0–45)	1.2 (4.1)	0.95	1.2 (3.2)	0.91	0.943
Intragroup conflict (NIOSH-GJSQ: 3–15)	7.2 (2.9)	0.87	6.5 (2.9)	0.87	<0.001
Intergroup conflict (NIOSH-GJSQ: 3–15)	6.6 (3.0)	0.87	5.7 (2.7)	0.89	<0.001
Supervisor support (JCQ: 4–16)	11.5 (2.4)	0.93	11.5 (2.6)	0.93	0.657
Co-worker support (JCQ: 4–16)	11.6 (2.0)	0.85	12.0 (1.9)	0.84	<0.001
Interactional justice (OJQ: 1–5)	3.7 (0.9)	0.96	3.7 (0.9)	0.96	0.795
Psychological distress (K6: 0–24)	3.9 (5.0)	0.93	4.2 (4.9)	0.92	0.306

† SD: standard deviation. ‡ *p* for sex difference of each demographic variable and scale score (*t*-test or chi-square test). § NAQ-R: Negative Acts Questionnaire-Revised; LIPT: Leymann Inventory of Psychological Terror; NIOSH-GJSQ: National Institute for Occupational Safety and Health Generic Job Stress Questionnaire; JCQ: Job Content Questionnaire; OJQ: Organizational Justice Questionnaire.

R “weekly” or “daily” during the previous six months had significantly higher LIPT scores, higher intragroup and intergroup conflict, and higher psychological distress as well as lower supervisor and co-worker support, and lower interactional justice ($p < 0.001$).

Prevalence of workplace bullying

Table 5 presents the frequencies of each item in the NAQ-R. When operational criteria were used, a total of 9.0% of the participants reported at least one of the 22 negative acts of the NAQ-R weekly or more in the past six months. In addition, 5.9% endorsed the item of self-labeling as a victim of the NAQ-R and 0.7% were bullied on a weekly basis. On the other hand, 4.0% of the participants met the operational criteria for the LIPT, (i.e., at least one form of bullying weekly or more, and for at least six months in the past 12 months); 6.5% endorsed the item of self-labeling as a victim of the LIPT.

Discussion

The newly translated Japanese version of the NAQ-R showed an acceptable level of internal consistency reliability. Workplace bullying measured by the NAQ-R

was highly correlated with workplace bullying measured by other scales, including the LIPT, and also with variables on interpersonal relations at work and psychological distress in the theoretically expected directions, supporting the concurrent and construct validity of the scale.

The NAQ-R had high Cronbach's alpha coefficients of 0.95 and 0.91 for males and females, respectively, indicating high internal consistency for the Japanese version of this scale. These coefficients are similar to or even higher than those reported in previous studies^{8, 24}. This suggests the Japanese version of the NAQ-R has a level of reliability comparable to that of the European version.

The total score on the NAQ-R positively correlated with the two indicators of being a victim of workplace bullying measured as part of the NAQ-R and the LIPT. This finding is consistent with a previous study that reported the total score of the NAQ-R was strongly correlated with the perception of being a victim of workplace bullying ($r = 0.54, p < 0.001$)²¹. Scores of the NAQ-R seem to increase parallel to the frequency of labeling oneself as a victim of bullying, although self-

Table 2. Exploratory factor analysis of 22 items of the NAQ-R using the maximum likelihood method and promax rotation among 1,626 civil servants in Japan

Item #	Item wording	Factor 1	Factor 2	Factor 3
Factor 1: Person- and work-related bullying				
8	Being shouted at or being the target of spontaneous anger (or rage) (i) (p')	0.80	-0.05	-0.06
13	Persistent criticism of your work and effort (p) (p')	0.77	0.09	-0.07
2	Being humiliated or ridiculed in connection with your work (p) (p')	0.72	-0.11	0.11
7	Having insulting or offensive remarks made about your person (i.e. habits and background), your attitudes or your private life (p) (p')	0.62	0.21	-0.08
14	Having your opinions and views ignored (w) (w')	0.62	-0.03	0.23
20	Being the subject of excessive teasing and sarcasm (p) (p')	0.59	0.31	-0.12
11	Repeated reminders of your errors or mistakes (p) (p')	0.58	0.24	-0.06
17	Having allegations made against you (p) (p')	0.57	0.26	-0.00
12	Being ignored or facing a hostile reaction when you approach (p) (p')	0.56	0.13	0.05
1	Someone withholding information which affects your performance (w) (w')	0.56	-0.32	0.36
18	Excessive monitoring of your work (w) (w')	0.56	0.08	0.08
5	Spreading of gossip and rumors about you (p) (p')	0.54	0.23	0.02
9	Intimidating behavior such as finger-pointing, invasion of personal space, shoving, blocking/barring the way (i) (p')	0.49	0.32	-0.03
21	Being exposed to an unmanageable workload (w) (w')	0.45	-0.01	0.08
16	Being given tasks with unreasonable or impossible targets or deadlines (w) (w')	0.44	0.01	0.22
19	Pressure not to claim something which by right you are entitled to (e.g. sick leave, holiday entitlement, travel expenses) (w) (w')	0.35	0.17	0.06
6	Being ignored, excluded or being "sent to Coventry" (p) (p')	0.31	0.21	0.30
Factor 2: Physical or psychological intimidation bullying				
10	Hints or signals from others that you should quit your job (p) (p')	-0.02	0.83	0.03
22	Threats of violence or physical abuse or actual abuse (i)	-0.08	0.75	0.07
15	Practical jokes carried out by people you don't get on with (p) (p')	0.22	0.48	0.07
Factor 3: Occupational devaluation				
4	Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks (p) (w')	-0.08	0.15	0.80
3	Being ordered to do work below your level of competence (w) (w')	-0.00	0.06	0.73
Variance explained (%)		44.8	3.9	2.7

(w): Work-related bullying; (p): Person-related bullying; (i): Physically intimidating bullying, according to Einarsen, Hoel, and Notelaers, 2009. (w'): Work-related bullying; (p'): Person-related bullying, according to Einarsen & Hoel, 2001. Bold figures indicate factor loadings greater than 0.30.

labeling as a victim of bullying may be related to factors other than exposure to bullying behaviors²¹). The NAQ-R score was also strongly and positively correlated with the LIPT score, suggesting that NAQ-R and LIPT measure an identical phenomenon, workplace bullying. These findings support the concurrent validity of the Japanese version of NAQ-R.

The findings of the present study also support the construct validity of this scale. For instance, high NAQ-R total scores were correlated high psychological distress. This finding is consistent with a previous study that

reported that scores on the NAQ-R were correlated with poor mental health²¹). High NAQ-R scores were also correlated with high intragroup and intergroup conflict, low supervisor and co-worker support, and low interactional justice. These patterns were replicated in similar analyses comparing average scores of these scales by a dichotomous category of workplace bullying measured by NAQ-R. These findings are in expected directions, and also concordant with the fact that NAQ-R correlated with high work pressure from workload, poor organizational climate, high stress from relationships with

Table 3. Pearson's correlation coefficients between the total score of NAQ-R and workplace bullying measured by other scales, interpersonal relations at work, and psychological distress among 1,626 civil servants in Japan

Scales †	Crude	Sex and age-adjusted
Self-labeling as a victim (NAQ-R) ‡	0.58	0.58
Self-labeling as a victim (LIPT) ‡	0.49	0.49
The number of bullying behavior (LIPT)	0.77	0.77
Group conflict: NIOSH-GJSQ		
Intragroup conflict	0.30	0.30
Intergroup conflict	0.33	0.33
Worksite social support: JCQ		
Supervisor support	-0.33	-0.33
Co-worker support	-0.26	-0.26
Interactional justice: OJQ	-0.35	-0.35
Psychological distress: K6	0.48	0.48

† NAQ-R: Negative Acts Questionnaire-Revised; LIPT: Leymann Inventory of Psychological Terror; NIOSH-GJSQ: National Institute for Occupational Safety and Health Generic Job Stress Questionnaire; JCQ: Job Content Questionnaire; OJQ: Organizational Justice Questionnaire.

‡ 0=no, 1=yes. All correlation coefficients are significant ($p < 0.001$).

Table 4. Comparisons of the number of victims of bullying and average scores of workplace bullying, interpersonal relations at work, and psychological distress between participants who had experienced at least one negative act weekly or daily (targets of bullying) and that of monthly or less (no target) assessed by NAQ-R among 1,626 civil servants in Japan

Scale scores §	Targets of bullying (N=146)		No target (N=1,480)		Adjusted p value ‡
	Average (SD) †	n (%)	Average (SD)†	n (%)	
Workplace bullying: LIPT					
Total score (0-45)	7.4 (8.1)		0.6 (2.1)		< .001
Leymann definition ¶		36 (24.7)		29 (2.0)	< .001
Self-labeling as a victim ¶¶		46 (31.5)		60 (4.1)	< .001
Group conflict: NIOSH-GJSQ					
Intragroup conflict	9.0 (3.1)		6.6 (2.8)		< .001
Intergroup conflict	8.5 (3.3)		5.9 (2.7)		< .001
Worksite social support: JCQ					
Supervisor support	9.5 (3.1)		11.7 (2.3)		< .001
Co-worker support	10.5 (2.7)		11.9 (1.8)		< .001
Interactional justice: OJQ	3.0 (1.1)		3.8 (0.9)		< .001
Psychological distress: K6	9.7 (7.0)		3.5 (4.3)		< .001

†SD: standard deviation. ‡Adjusted for sex and age. § LIPT: Leymann Inventory of Psychological Terror; NIOSH-GJSQ: National Institute for Occupational Safety and Health Generic Job Stress Questionnaire; JCQ: Job Content Questionnaire; OJQ: Organizational Justice Questionnaire. ¶ Leymann definition: 1) exposure to at least one form of bullying behavior listed in the LIPT within the previous 12 mo, 2) weekly or more, and 3) for at least 6 mo. ¶¶ Self-labeling as a victim: the number of people who answered they were victims of bullying.

colleagues, low organizational commitment, and low organizational satisfaction in a previous study²¹), as well as that interactional injustice is a strong predictor of workplace aggression^{39, 40}).

From the exploratory factor analysis of the 22 NAQ-R items, three factors were extracted. This factor structure

differs slightly from the three-factor structure of NAQ previously reported²¹). The extracted Factor 1 consisted of both person-related and work-related bullying²¹), possibly because the respondents perceived these aspects closely together. Factor 2 in this study seems to consist of items of severe forms of bullying, which previously

Table 5. Percentage of endorsed items on the NAQ-R among civil servants in Japan (N=1,626)

During the last 6 months, how often have you been subjected to the following negative acts in the work place?	Never (%)	Now and then (%)	Monthly (%)	Weekly/daily* (%)
1) Someone withholding information which affects your performance	66.4	24.9	5.7	3.0
2) Being humiliated or ridiculed in connection with your work	83.0	13.2	2.0	1.9
3) Being ordered to do work below your level of competence	86.3	9.5	1.8	2.4
4) Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks	89.9	7.6	1.3	1.2
5) Spreading of gossip and rumors about you	86.6	10.9	1.0	1.5
6) Being ignored, excluded or being “sent to Coventry”	90.7	6.9	1.0	1.3
7) Having insulting or offensive remarks made about your person (i.e. habits and background), your attitudes or your private life	87.1	10.3	1.1	1.4
8) Being shouted at or being the target of spontaneous anger (or rage)	85.2	11.3	2.5	1.1
9) Intimidating behavior such as finger-pointing, invasion of personal space, shoving, blocking/barring the way	93.5	4.4	1.2	0.9
10) Hints or signals from others that you should quit your job	96.4	3.0	0.4	0.2
11) Repeated reminders of your errors or mistakes	88.3	9.8	1.2	0.8
12) Being ignored or facing a hostile reaction when you approach	90.3	6.8	1.2	1.7
13) Persistent criticism of your work and effort	88.2	8.9	1.9	1.0
14) Having your opinions and views ignored	82.5	14.1	1.8	1.6
15) Practical jokes carried out by people you don't get on with	94.9	3.9	0.6	0.6
16) Being given tasks with unreasonable or impossible targets or deadlines	85.2	12.4	1.4	1.0
17) Having allegations made against you	92.5	6.0	1.2	0.3
18) Excessive monitoring of your work	90.6	6.6	0.8	2.1
19) Pressure not to claim something which by right you are entitled to (e.g. sick leave, holiday entitlement, travel expenses)	93.2	5.7	0.7	0.4
20) Being the subject of excessive teasing and sarcasm	94.0	4.3	1.0	0.8
21) Being exposed to an unmanageable workload	87.3	9.8	1.3	1.5
22) Threats of violence or physical abuse or actual abuse	98.6	1.2	0.2	0.1
Frequency of people who chose at least one item			14.5	9.0

* Response categories “about weekly” and “about daily” have been thrown together to make one category.

were classified as “person-related bullying” and “physical intimidation.”²¹⁾ Factor 3 consisted of two items which could be interpreted as occupational devaluation, i.e., being given a less important task. Japanese employees may distinguish types of workplace bullying differently from those observed in Western countries. In the Japanese workplace, which is characterized by collectivism^{29, 41)}, people are expected to share values and responsibility. In such a workplace culture, being given a less important task may imply that a worker is being placed in a lower position in the workplace society and perceived as a sign of social exclusion from the workplace. However, Factor 1 explained most variance. The one factor structure fitted the data best for the Japanese version of the NAQ-R²²⁾. Since none of the models tested in the study sufficiently fitted to the data, the factor structure of the NAQ-R needs to be reexamined in a larger and more diverse sample of employees, including private sector employees.

Nine percent of the participants were classified as targets

of workplace bullying, according to the NAQ-R, having reported at least one of the 22 negative acts weekly or more in the past six months. This figure is within but at a lower end of the prevalence (8–15%) reported based on NAQ-R^{8, 9)}. When subjective criteria were used, 5.9% felt subjected to bullying, and 0.7% were regularly bullied on a weekly basis. Previous studies reported a wide range of prevalence based on the subjective criteria: 4.6–26.8% were bullied, and 0.6–10% were regularly bullied^{8, 9, 14, 20)}. The prevalence in this study is within the range of previous reports. Generally, the prevalence using the operational method is higher than that of subjective method⁵⁾, suggesting prevalence is underestimated if only the subjective method is used⁴²⁾. This pattern was also observed in this study.

Finally, some possible limitations should be considered. First, the response rate was moderate, and a certain number of respondents who failed to fully complete the questionnaire were excluded. Participants who had an

experience of workplace bullying may have been more likely to respond to the survey, which could result in overestimation of the prevalence. On the other hand, as “bullying” is a sensitive word for employees who have experienced bullying behavior in the past, they may have been reluctant to complete a questionnaire including such items. In fact, some participants wrote they could not complete the questionnaire because the items of the NAQ-R reminded them of a past unhappy experience. In this case, the prevalence may have been underestimated. Second, the NAQ-R was developed in European countries, which may result in poor model fit in confirmatory factor analysis. The results of the present study suggest that negative acts listed in this scale are not appropriate for Japanese employees. For example, in item #22 (“threats of violence or physical abuse or actual abuse”), the word “physical abuse” may have too strong a meaning, sounding like a crime in Japanese, and resulting in a biased response from respondents. In contrast, in Japan, apparently-unrelated bullying behavior is often likely to happen: e.g., “being ordered to do work below your level of competence” (item #3). At the same time, Japanese culture has equalitarianism. Japanese people therefore are sensitive to differential treatment among employees within the company. At this point, the NAQ-R might be missing some items of negative acts originally experienced by Japanese workers. Further examination of the wording or the content of the NAQ-R is needed. Finally, the present study did not examine the test-retest reliability or concurrent validity using an objective assessment of workplace bullying, which should also be tested in a future study.

This study confirmed the internal consistency reliability and concurrent and construct validity of the newly developed Japanese version of the 22-item NAQ-R for the general working population using a sample of Japanese civil servants. This version of NAQ-R may be a useful measure to investigate the prevalence, associated factors, and impact on health of workplace bullying in Japan, which should contribute to identifying, controlling, and preventing workplace bullying.

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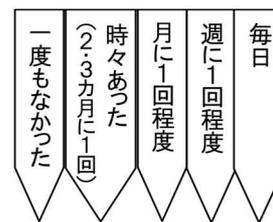
Appendix: The Japanese Version of the Negative Acts Questionnaire—Revised

以下に示すものは、職場でたびたび見かけられるネガティブな言動の例です。

あなたは、以下のような言動を、どのくらいの頻度で経験しましたか。

過去6ヶ月間にあなた自身が経験した頻度に、

もっとも近い数字に○をつけてください。



1) あなたが仕事をする上で影響を及ぼすような情報を与えてもらえなかった	1	2	3	4	5
2) 仕事に関することで恥をかかされた、あるいは、からかわれた	1	2	3	4	5
3) あなたの能力・力量よりも低い仕事を与えられた	1	2	3	4	5
4) 仕事で責任を負っていた部分から外された、あるいはよりつまらない仕事や不快な仕事に換えられた	1	2	3	4	5
5) あなたに関する陰口や噂を広められた	1	2	3	4	5
6) あなたがいけないかのように振る舞われた、のけものにされた、もしくは仲間外れにされた	1	2	3	4	5
7) あなた自身のこと(習慣や生い立ち)やあなたの振る舞い、あるいは私生活について、ばかにされたり、失礼なことを言われた	1	2	3	4	5
8) 怒鳴られた、あるいは、いきなり怒り(もしくは激怒)の矛先を向けられた	1	2	3	4	5
9) 非難される、パーソナルスペース(個人の空間)に立ち入られる、押しのけられる、道をふさがれる、といったような威圧的な行為を受けた	1	2	3	4	5
10) 仕事を辞めるべきだとほめかされた、もしくは態度で示された	1	2	3	4	5
11) あなたが起こした間違いや誤りを、繰り返し思い出させられた	1	2	3	4	5
12) あなたが近づいたとき、無視されたり、敵意を持った反応をされた	1	2	3	4	5
13) あなたの仕事や努力に対して、何度も批判された	1	2	3	4	5
14) あなたの意見や考えが無視された	1	2	3	4	5
15) あなたとうまの合わない人から、悪質ないたづらをされた	1	2	3	4	5
16) 納得がいかない、もしくはやり遂げることが不可能な目標や締め切りを設定された仕事を与えられた	1	2	3	4	5
17) 根拠なく非難された	1	2	3	4	5
18) 必要以上に仕事を監視された	1	2	3	4	5
19) あなたに権利のあるもの(例えば疾病休業の申し出、休暇の取得、交通費の支給など)を主張できないよう、圧力をかけられた	1	2	3	4	5
20) 度が過ぎた からかいや嫌みを言われる対象となった	1	2	3	4	5
21) 手に負えないくらい沢山の仕事を与えられた	1	2	3	4	5
22) 暴力や、身体的な虐待を受ける恐れがあった。もしくは、実際に被害を受けた	1	2	3	4	5

職場の「いじめ」についておたずねします。

ここでは「いじめ」を「特定の個人もしくは複数の人が、1人もしくは複数の人から、一定期間にわたって継続的に好ましくない行為を受けていると感じながらも、これらの行為から自分を守ることが難しい状況」と定義します。

1回限りの出来事は含めません。

23) あなたは、職場でいじめにあったことがありますか？

この定義を用いたとき、過去6ヶ月間に職場で
いじめを受けたことがあるか、最もあてはまるものに○をつけてください

1. 1	2. はい、	3. はい、	4. はい、	5. はい、
いいえ	ほんのまれに	時々	週に何回か	ほぼ毎日