

Table3 Goodness of Fit Measures For two different models (n=3166)

Goodness of fit	Acceptable values	Model	
		One factor model	Two factor model
χ^2 (df)	small	1036.6 (34)	547.2 (34)
p.	>.05	0.000	0.000
Goodness of fit index	>.90	0.952	0.977
Adjusted goodness of fit index	>.80	0.925	0.962
Akaike's Informational Criterion	small	1076.5	589.2

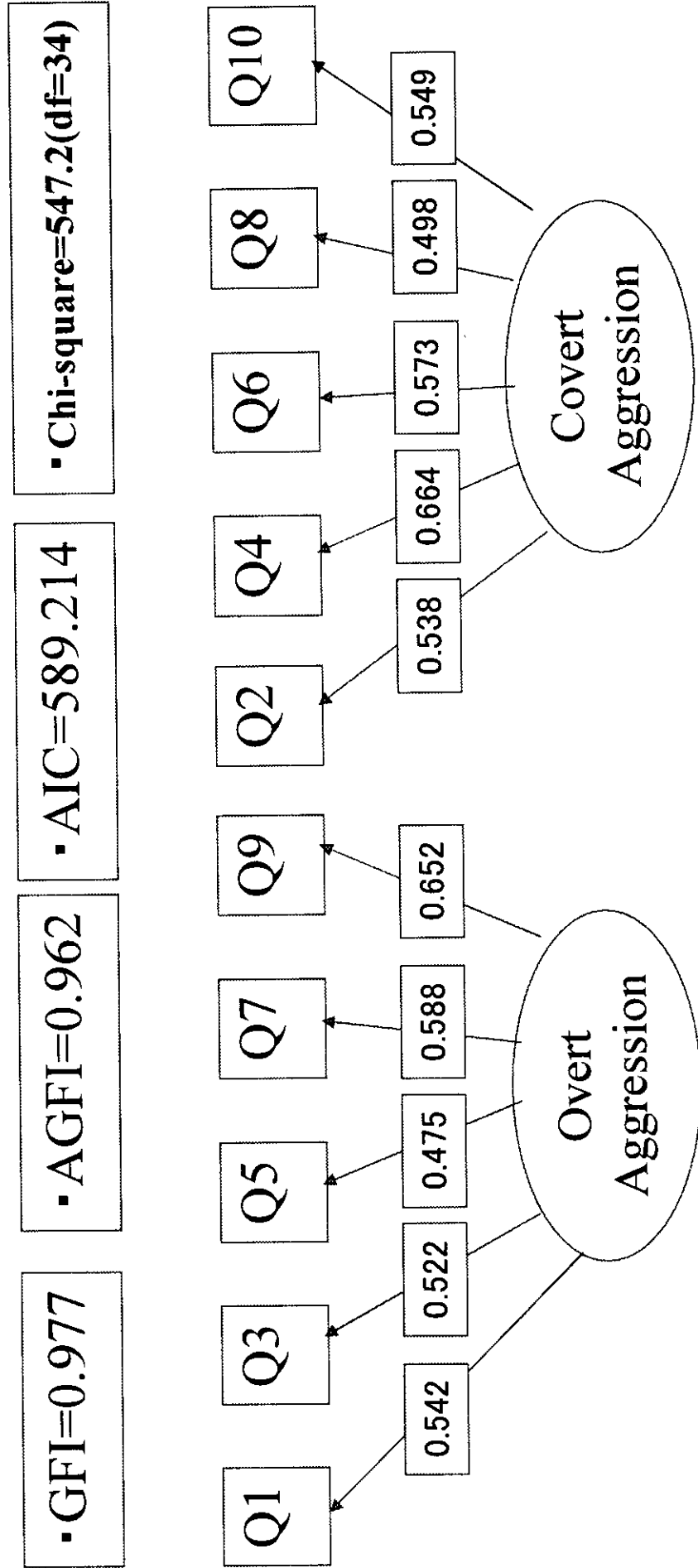
Table4 Relationship of O-CAI and other psychological variables

		O-CAI	
		overt and obvious direct aggression	covert and latent indirect aggression
P-F study (n=99)	extra-aggression	0.30*	0.23*
	intra-aggression	-0.17	-0.23*
	im -aggression	-0.18	-0.08
BAQ (n=117)	Physical-aggression	0.45*	0.37*
	short-temper	0.73**	0.53**
	hostility	0.39*	0.47*
	Verbal-aggression	0.17	0.10
	total score of BAQ	0.65**	0.55**
CES-D (n=3166)		0.16*	0.23*

* p < 0.05 ** p < 0.01

Figure Caption

Figure 1. Path coefficients in the two-factor model underlying the Overt-Covert Aggression Inventory. (Item number refer to the original item numbers in the scale) Chi-square=547.2, df=34: Goodness of Fit Index (GFI)= 0.96: Adjusted Goodness of Fit Index (AGFI) = 0.97: Akaiki's Informational Criterion (AIC)=589.2



4.0. AMOS is an SPSS program for structural equation modeling (Table 3; Figure 1). We compared the explanatory power of the one factor model of the O-CAI with that of the two factors model. Each model provided an acceptable fit. However, this analysis suggested that the 2-factor model was better (Goodness of Fit Index = 0.97; Adjusted Goodness of Fit Index = 0.96; these indexes were expected above 0.90; Akaike's Informational Criterion = 589.2; Chi-square = 547.2, df = 34; on these indexes, a smaller value is preferable).

Construct Validity of O-CAI (study 1: study 3)

To examine the construct validity of the O-CAI, we investigated the relationship between O-CAI scores and Center for Epidemiological Studies Depression Scale scores using the Pearson's product-moment correlation coefficients (Table 4). We found a statistically significant, but very small positive correlation between overt and obvious direct aggression score, covert and latent indirect aggression score, and depression score ($r=0.16-0.23$, $p<0.05$, $n=3166$).

Additionally we examined the relationships between the direction of aggression—extra-aggression score, intra-aggression score or im-aggression score—in the Picture-Frustration Study and overt and obvious direct aggression score, and covert latent indirect aggression score using the Pearson's correlation coefficient. This analysis indicated a small positive relationship between overt and obvious direct aggression score and extra-aggression score ($r=0.30$, $p<0.05$), a small positive correlation between covert and latent indirect aggression score and extra-aggression score ($r=0.23$, $p<0.05$), and a small negative correlation between covert and latent indirect aggression score and intra-aggression score ($r=-0.23$, $p<0.05$).

Concurrent Validity of O-CAI (Study 4)

To establish the concurrent validity of the O-CAI, we examined the relationship between the Buss-Perry Aggression Questionnaire scores and O-CAI scores (see Table 4). There were positive correlations between overt and obvious direct aggression score, Physical aggression score, as well as between Short-temper score and Hostility score ($r=0.39-0.73$, $p<0.01$). There were also positive correlations between covert and latent indirect aggression score and Physical aggression score, Short-temper score, and Hostility score ($r=0.37-0.53$, $p<0.01$).

Discussion

Descriptive statistics and reliability results demonstrated that the O-CAI has acceptable psychometric characteristics, as well as adequate reliability. Factor analysis extracted the two factors; Obvious Direct Aggression and Latent Indirect Aggression, which were the predicted factor groups. The two-factor model that we predicted was optimal for describing aggression as measured by the O-CAI because results confirmed the factor validity of the O-CAI. Since the O-CAI has just 10 items and has an adequately high correlation with the Buss-Perry Aggression Questionnaire, it is concluded that the O-CAI is acceptable and more convenient than questionnaires that have been used previously for assessing aggression in large populations.

Both scales of the O-CAI showed statistically significant positive correlations with total scores of the Buss-Perry Aggression Questionnaire, as well as with each subscale of the Buss-Perry Aggression Questionnaire, with the exception of verbal aggression. A previous study by Ando, et al. (1999) has shown that verbal aggression scores of the Buss-Perry Aggression Questionnaire were not associated with other subscale scores. Thus, verbal aggression measured by the Buss-Perry Aggression Questionnaire may be too specific to

correlate with other aspects of aggression, including aggression as measured by the O-CAI and the Buss-Perry Aggression Questionnaire.

Regarding construct validity, there was a statistically significant, but very weak positive association between the O-CAI scores and the scores of the Center for Epidemiological Studies Depression Scale. Moreno et al. (1993) has investigated the relationship between hostility, aggression, and depression. According to their findings, depression is linked to hostility/anger and most strongly linked to attitudinal (e.g., resentment, suspicion, guilt, intropunitiveness) as opposed to motoric (e.g. assault, verbal hostility) forms. In their study, the mean correlation for the attitudinal forms of hostility/anger was .57, whereas those for the motoric forms were .31. It may be the case that the two types of aggression measured by O-CAI were of the motoric form, hence the weak correlations between aggression scores of the O-CAI and the score of the Center for Epidemiological Studies Depression Scale. However, further studies are required on this issue.

The O-CAI measures self-perception of aggression, while it is assumed that aggression measured by the Picture-Frustration study is simulated reactions in frustrating situations (Ichiya, 1986). It was predicted that high scorers on the O-CAI, were more likely to display extraaggression on the Picture-Frustration study. Both factors of the O-CAI had a significant positive relationship with extraaggression scores of the Picture-Frustration study implying construct validity. On the other hand, although covert aggression scores had a slight negative relationship with intraaggression scores, overt aggression scores had no relationship with intra aggression scores of the Picture-Frustration study. Thus, we can conclude that people with high covert aggression scores tend to express their anger and aggression to others, but

simultaneously tend to repress their anger and aggression to themselves.

This study revealed that overt and obvious direct aggression and covert and latent indirect aggression, as measured by O-CAI, had high reliability and partial validity. The present study showed that O-CAI is a brief (10-item) and convenient tool to assess aggression. However, more detailed studies are required to clarify the issue of the construct validity and the discriminant validity of the O-CAI.

References

- Ando, A., Soga, S., Yamasaki, K., Shimai, D., Shimada, H., Utsuki, N., Oashi, O., & Sakai, A. (1999). Development of the Japanese version of the Buss-Perry Aggression Questionnaire (BAQ). *The Japanese Journal of Psychology, 70*(5), 384-392.
- Buss, A.H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology, 22*(1), 343-349.
- Dembroski, T.M., & Costa, P.T., Jr. (1987). Coronary prone behavior: Components of the type A pattern and hostility. *J Pers Jun, 55*(2), 211-35
- Guilford, J.P. (1954). *Psychometric method*. New York: McGraw-Hill.
- Friedman, M., & Rosenman, R.H. (1959). Association of specific overt behavior pattern with blood and cardiovascular findings. *Journal of the American Medical Association, 169*, 1286-1296.
- Friedman, H.S., & Booth-Kewley, S. (1987). Personality, type A behavior, and coronary heart disease: The role of emotional expression. *J Pers Soc Psychol., 53*(4), 783-792.
- Fukunishi, I., Hattori, M., Hattori, H., Imai, Y., Miyake, Y., Miguchi, M., & Yoshimatsu, K. (1992). Japanese type A behavior pattern is associated with "typus melancholicus": A study from the sociocultural viewpoint. *International Journal of Psychiatry, 38*(4): 251-256.

- Graybill, D., & Blackwood, A. (1996). Prediction of adolescent aggression by childhood personality measures: A comparison of projective procedures, self-report tests, and behavior ratings. *Journal of Clinical Psychology, 52*(1), 61-66.
- Hayano, J., Takeuchi, S., Yoshida, S., Jozuka, H., Mishima, N., & Fujinami T. (1989). Type A behavior pattern in Japanese employees: Cross-cultural comparison of major factors in Jenkins Activity Survey (JAS) responses. *Journal of Behavioral Medicine, 12*(3), 219-231.
- Ichiya, K. (1986). *Guide book of PF-study*. Kyoto: Sankeibou. (in Japanese).
- Lahad, A., Heckbert, S.R., Koepsell, T.D., Psaty, B.M., & Patrick, D.L. (1997). Hostility, aggression and the risk of nonfatal myocardial infarction in postmenopausal women. *Journal of Psychosomatic Research, 43*(2), 183-195.
- Mandal, M.K., Harizuka, S., Bhushan, B., Mishra, R.C. (2001). Cultural variation in hemifacial asymmetry of emotion expressions. *British Journal of Social Psychology 40*(3), 385-398.
- Radlof, L.S. (1977). The Center for Epidemiological Studies Depression Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Rahim, M.A. (1983). A measure of styles of handling interpersonal conflict. *Academy of Management Journal, 26*, 368-376.
- Rosenzweig, S. (1945). The picture-association method and its application in a study of reactions to frustration. *Journal of Personality, 14*, 3-23.
- Tellenbach, H. (1961). *Melancholie* (1st ed.). Berlin: Springer. (in German).
- Yoshimatu, K., Miguchi, M., Miyake, Y., Ozaki, A., Minagawa, K., Takeuchi, T., & Ito, R. (1989). On the cross-generational differences of personality traits: Applying "depression-related personality trait scale (DRP)." *Japanese Journal of Social Psychiatry, 12*, 90-97.

失体感症と過剰適応傾向の評価尺度の作成

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要約

心身症者に特徴的である失体感症と過剰適応傾向に関する評価尺度を作成し、妥当性と尺度内の信頼性(内的整合性)を検討することを目的とした。被験者は東京都内の1企業の労働者189名で、そのうち男性131名(平均年齢50.7歳)女性58名(同49.2歳)であった。失体感症と過剰適応傾向の評価項目は青木(1978)の「身体への気づき」尺度を参考にそれぞれ10項目, 9項目を作成し、回答を求めた。この他日常体験するストレス、精神的健康度(GHQ28項目版)、社会的望ましさ尺度、生活習慣(睡眠、食事など)などにも回答を求めた。項目全体との相関係数の小さい項目を削除した結果、失体感症尺度、過剰適応傾向尺度としてそれぞれ7項目, 5項目を選択した。両尺度の α 係数は0.76と0.68であり、十分な信頼性が得られた。さらに両尺度の得点が上位25%、下位25%の被験者を抽出し、他の尺度(ストレスなど)の得点を比較した。その結果、失体感症得点の高い群は低い群に比べより多くのタバコを吸い、飲酒量が多く、毎日朝食を摂っている者が少なく、医師による治療を受けている者が少ないことが分かった。この結果は本研究での失体感症の概念と適合する結果であったため、尺度の妥当性が示されたと考えられた。過剰適応傾向の得点の高い群は低い群に比べより多くのストレスを経験していた。社会的望ましさについては、男性では過剰適応高得点群の方が低得点群よりも得点が低く、女性では高得点群の方が得点が高かった。結果のうちストレスについては本研究での過剰適応の概念と適合する結果であると考えられた。社会的望ましさに対する男女の違いは、過剰適応状態に対する男女の態度の違いを反映している可能性があり、過剰適応尺度としてより詳細な妥当性検討の必要性が考えられた。

はじめに

Sifneos, P.E.(1973)により提唱された Alexithymia(失感情症)という概念は、神経症者と心身症者の異同という文脈の中で取り上げられ、さらに心身症の各疾患に共通する特徴として扱われるようになった(青木, 1978)。この Alexithymia を評価するための尺度として、治療者が記入するBIQ(Beth Israel Questionnaire; Sriram, T. G., Pratap, L., and Shanmugham, V., 1988)や被験者

自身が回答するSSPS(The Schalling-Sifneos Personality Scale, Sifneos; P.E., 1986)やTAS(Tronto Alexithymia Scale; Taylor, G.J., et al., 1985)などが開発され心身症患者の特徴に関して詳しい検討がなされている。

池見(1977)は、心身症患者には Alexithymia 傾向がみられるだけでなく、自己の身体感覚への気づきにも乏しいことを指摘し、これを失体感症と呼んだ。この失感

情症を評価するための尺度は青木(1978)により考案されているが、妥当性や信頼性に関する検討はなされていない。

また、これらの概念と比べるとより社会的側面が強いが、多くの症例報告で心身症患者の特長として過剰適応状態が報告されている。患者の示す症状も入社拒否(佐久間, 1998)、全身倦怠感(伊藤, 1998)、気管支ぜん息(江花, 1998; 江花 1996; 馬場, 1996)、呼吸不全(殿岡他, 1998)、バセドウ病(大田垣, 1996)、胃・十二指腸潰瘍(石川他, 1996)など多岐にわたっている。このように心身症患者における過剰適応状態もまた臨床場面ではしばしば観察されており、心身症発症の危険因子と考えられている。しかしこの特徴に関しても本邦では先の失体感症と同様に信頼性と妥当性が検討された客観的指標は開発されていない。

そこで本研究では、心身症者に特徴的である失体感症と過剰適応傾向に関する評価尺度を作成し、信頼性と妥当性に関して検討することを目的とした。また、本研究では失体感症と過剰適応を次のように定義することとした。失体感症とは、自分の身体感覚に鈍くなっている状態であり、身体感覚がないわけではないが、環境要因や個人の特性に基づいて、社会適応への限りない努力のために身体へのケアが行われにくくなっている状態である。過剰適応とは、他者や環境から疎外されることへの無意識の恐怖からくる非現実的で過剰な努力や振る舞いのことである。

〔目的〕心身症者に特徴的である失体感症と過剰適応傾向に関する評価尺度を作成し、妥当性と尺度内の信頼性(内的整合性)を検討することを目的とした。

〔方法〕

対象 都内の1企業の労働者が対象として行った。第1,第2の調査は生活習慣病予防

調査として企業の定期検診時に対象者の日常生活を多面的に評価した。第1調査は40歳以上が対象で189名(男性131名,女性58名)の有効回答を得た。平均年齢は男性50.7歳(SD=5.3)、女性49.2歳(SD=4.6)であった。

調査内容

失体感症項目と過剰適応項目は、青木(1978)の「身体への気づき」尺度を参考に心身症患者の特徴を認知、行動的側面からとらえる項目を作成した(それぞれ10項目, 9項目)。回答は失体感症、過剰適応ともに全く当てはまらない(0点)から常に当てはまる(3点)までの4件法で回答した。

ストレッサー 労働者用ストレス評価尺度(富岡, 1997a, 1997b)は22項目のDaily Hassles項目からなり下位尺度として、「仕事上の問題」「職場の人間関係」「家庭での問題」「健康上の問題」「ゆとりのなさ」がある。それぞれの項目についてどの程度の経験頻度があったかを「全然なかった(0点)」から「非常によくあった(4点)」までで回答し、経験のあった出来事については、どの程度の苛立ちを感じたかを「全然感じない(0点)」から「非常に強く感じる(4点)」までの4件法で回答する。分析には22のストレス状況の経験頻度の合計点をストレッサー得点とした。得点範囲は0-88であった。

日本版 General Health Questionnaire (GHQ)はGoldberg(1972)により精神的疾患に関する客観的情報を得るために開発された尺度である。60項目から成る原版を短縮した版が数種類あるが、本調査では28項目版を用いた。日本語版に関する妥当性の検討もなされている(大坊ら, 1987; 福西, 1990)。本研究では0点と1点を「問題なし(0)」, 2点と3点を「問題あり(1)」と換算するGHQ法により得点化したため、0から28点までの得点範囲になる。

社会的望ましき尺度は、Crowne & Marlowe(1960)が作成した33項目からなる尺度を北村と鈴木(1986)が翻訳し、選択された10項目を用いた。それぞれの項目に「はい」か「いいえ」で回答する。得点範囲は0-10点である。質問紙調査などで回答を社会的に望ましい方向に歪める傾向を測定する尺度として用いられているが、本研究では過剰適応尺度の妥当性検討のために用いた。

生活習慣として睡眠習慣、食習慣、喫煙、飲酒のほか、疲労感、通院状況(通院して

いる、していない)、困っている症状の有無について回答を求めた。

[結果]

1.尺度構成

失体感症10項目、過剰適応9項目のについて項目全体との相関(I-T相関)を算出し、相関係数の低い項目(0.30未満)を1項目ずつ削除し、それぞれ7項目($\alpha=0.76$, Table 1), 5項目($\alpha=0.68$, Table 2)から成る症7項目、過剰適応5項目の合計点を算出し、それぞれ失体感症得点、過剰適応得点とした。

Table 1 失体感症項目のI-T相関係数と α 係数

4.調子がいいとつい無理をする。.....	0.31
5.医者に休めといわれるまで休まない。.....	0.56
6.多少熱が出ても働ける。.....	0.57
7.多少の体調の悪さは気にならない。.....	0.66
8.病気になるくらいでないと働いた気がしない。...	0.51
9.疲れ切るまで働きたい。.....	0.46
10.身体は丈夫な方である。.....	0.30
α 係数	0.76

Table 2 過剰適応項目のI-T相関係数と α 係数

1.頑張りやだ。.....	0.34
4.仕事中毒といわれたことがある。..	0.56
5.自己犠牲的だと思う。.....	0.46
7.上司より早く帰れない。.....	0.40
8.残業や休日出勤は苦にならない。...	0.41
α 係数	0.68

失体感症得点と過剰適応得点について男女差をt検定により分析したところ、失体感症得点では有意な差は示されなかったが、過剰適応得点では有意な差が示され ($t(185)=0.41, p<0.05$)、男性のほうが女性よりも高い得点を示した。そのため過剰適応得点に関する以下の分析では男女別に検討した。また、失体感症得点と過剰適応得点について年齢との相関係数を算出したところ、失体感症得点と年齢に有意な関係が示され ($r=0.20, p<0.01$)、失体感症得点が年齢の増加と共に増加する傾向が示された。そのため失体感症得点に関する以下の分析では年齢を調整した分析を行うこととした。過剰適応得点に関しては有意な関係は示されなかった。

2. 失体感症傾向と過剰適応傾向が健康状態とストレス経路、社会的望ましさ、生活習慣に与える影響

失体感症得点と過剰適応得点についてそれぞれ上位25%、下位25%の対象者を失体感症得点高群、低群、過剰適応得点高群、低群として2群の差を分析した。GHQ得点、ストレス得点、社会的望ましさ、睡眠時間についてはt検定または年齢を共変量とした共分散分析、1日の喫煙本数、1週間の飲酒日数、一度の飲酒量についてはWilcoxonの順位和検定、「はい」または「いいえ」で回答する食事の規則性、毎日の朝食摂取、間食をよくするか、最近の体重の変化、現在の通院、困っている症状はあるかについては χ^2 検定を行った。

2-1. 失体感症傾向の影響

失体感症得点の高群と低群のGHQ得点、ストレス得点、生活習慣の違いについて分析したところ、両群に1日の禁煙本数 ($p<0.05$)、一度の飲酒量 ($p<0.10$)、毎日の朝食摂取 ($p<0.10$)、現在治療を受けているか ($p<0.10$) の項目で有意あるいは有意な

傾向が示された。喫煙本数は高群のほうが低群に比べより多かった。一度の飲酒量も高群のほうが多かった。毎日朝食を摂る者の割合は、高群のほうが低群に比べ小さかった。現在治療を受けていると答えた者の割合は、高群の方が小さかった。

2-2. 過剰適応傾向の影響

過剰適応得点の高群と低群のGHQ得点、ストレス得点、生活習慣の違いについて男女別に分析した。

男性ではストレス得点 ($p<0.01$)、社会的望ましさ ($p<0.05$)、睡眠時間 ($p<0.05$)、最近の体重の変化 ($p<0.05$)、現在の治療 ($p<0.05$)、症状の有無 ($p<0.05$) で有意な差が示された。ストレス得点は過剰適応得点の高群のほうが低群よりも得点が高かった。社会的望ましさは、高群のほうが得点が低かった。睡眠時間は高群のほうが短かった。最近体重の変化があった者の割合は、高群のほうが大きく、低群では0%であった。現在治療を受けていると答えた者の割合は、高群のほうが小さかった。何らかの症状を有している者の割合は高群の方が小さかった。

女性ではストレス得点 ($p<0.05$)、社会的望ましさ ($p<0.01$)、一度の飲酒量 ($p<0.10$)、規則的な食事 ($p<0.10$)、毎日の朝食 ($p<0.05$) で有意あるいは有意な傾向が示された。ストレス得点は過剰適応得点の高群のほうが低群よりの高かった。社会的望ましさは高群の方が得点が高かった。一度の飲酒量は高群のほうが多かった。規則的に食事を摂る者の割合は高群のほうが小さく、毎日朝食を摂る者の割合は高群のほうが大きく100%であった。

[考察]

1. 失体感症尺度と過剰適応尺度の信頼性
相関分析によって選択された失体感症尺度の7項目と過剰適応尺度5項目は、それ

ぞれ十分な内的一貫性をもったものであることが示された。

2. 失体感症尺度と過剰適応尺度の信頼性

2-1. 失体感症尺度

失体感症尺度ではその得点と1日の禁煙本数、一度の飲酒量、毎日の朝食摂取、現在治療を受けているかの項目との間で有意な関係が示された。そしてそれらの方向性は、「自分の身体感覚に鈍くなっている状態であり、身体感覚がないわけではないが、環境要因や個人の特性に基づいて、社会適応への限りない努力のために身体へのケアが行われにくくなっている状態」と定義した失体感症の概念と合致するものであったと考えられる。

喫煙と飲酒、毎日の朝食摂取はBerkman and Breslow(1989)で挙げられた7つの健康維持習慣に関係する生活習慣である。本研究では失体感症傾向の高さはこれらの生活習慣の「悪さ」と関係していた。つまり、失体感症傾向の高い人はよく喫煙し、一度にたくさんの酒を飲み、朝食を毎日食べない傾向があった。これらのことは「身体へのケアが行われにくくなっている状態」と考えることが可能である。また現在治療を受けているかどうかについての回答でも治療を受けている者の割合は小さく、何らかの症状を有している割合に有意な差が示されなかったことを考慮すると、このこともケアが行われていない状態と考えられる。これらのことから、本研究で作成した失体感症尺度は、失体感症という状態を測定する尺度としての妥当性が示されたと考えられた。

2-2. 過剰適応尺度

過剰適応尺度ではその得点とストレスターの経験頻度、社会的望ましさとの間で男女とも有意な関係が示された。

このうち社会的望ましさに関しては、「他者や環境から疎外されることへの無意識の恐

怖からくる非現実的で過剰な努力や振る舞い」として定義した過剰適応状態との類似性が期待することができる。本研究では男女で関係の仕方が逆になっており、男性では期待された結果とは逆に、過剰適応得点の低い者の方が社会的に望ましい振る舞いをする 것이示された。女性では期待されたとおり、過剰適応得点の高い者の方が社会的に望ましい振る舞いをする傾向があった。この結果は過剰適応尺度の妥当性が疑問視される結果であるが、男女の過剰な社会適応に対する態度の違いが表れたのではないだろうか。つまり男性では過ぎた社会適応は、社会的に望まれることではないが、女性ではより好まれているのかもしれない。生活習慣についても男女により過剰適応状態の影響の出方は異なっていたため、男女の認識の違いについてはさらなる検討が必要であると考えられる。

ストレスターの経験頻度については男女共に過剰適応得点の高い者の方がより多くの出来事を経験していた。この結果は過剰適応という非現実的なまでの適応努力の結果として、人一倍多くのストレスフルな出来事に遭遇する機会を得るという点で、妥当な結果であると考えられる。

まとめ

心身症者に特徴的である失体感症と過剰適応傾向に関する評価尺度を作成し、失体感症尺度、過剰適応尺度と命名した。両尺度とも使用に耐える内的整合性を示した。失体感症尺度の得点の高さは、健康的な生活を疎外するような生活習慣との親和性が高く、概念的妥当性が確認された。過剰適応尺度の得点は男女により異なった認知的な意味合い反映していることが想定され、さらなる検討の必要性が考えられた。

文献

- 青木宏之 1978 アレキシシミアと心身医学. 治療, 60(3).
- Sifneos, P.E. 1973 The prevalence of 'Alexithymic' characteristics in psychosomatic patients. *Psychother. Psychosom.*, 22, 225-262.
- Sifneos, P.E. 1986 The Schalling-Sifneos Personality Scale revised. *Psychother Psychosom.* 1986;45(3):161-5.
- Sriram, T. G., Pratap, L., and Shanmugham, V. 1988 Towards enhancing the utility of Beth Israel Hospital Psychosomatic Questionnaire. *Psychother Psychosom.*, 49, 205-11.
- Taylor, G.J., Ryan, D., and Bagby, R.M. 1985 Toward the development of a new self-report alexithymia scale. *Psychother Psychosom.*, 44, 191-199.
- 佐久間一穂 1998心療内科のすべて;この一冊であなたも心療内科医;心の奥に潜む魔物との奮闘記;会社に行けないお父さん. 治療, 80(6), 1961-1963.
- 伊藤克人 1998 不定愁訴の診断と治療 (11);全身倦怠感. 心身医療, 10(2), 246-256.
- 江花昭一 1998 ライフステージと気管支ぜん息;壮年期のストレスと気管支ぜん息. アレルギーの臨床, 232, 350-353.
- 殿岡幸子, 谷口興一, 桂戴作, 安間文彦, 清水千代子 呼吸不全患者の日常生活制限と自我状態について. 呼吸と循環, 46(1), 77-82.
- 大田垣洋子, 柳井一郎, 岩本康行, 東方田芳邦, 桧脇千里 1996 バセドウ病患者の東大式エゴグラム所見. 広島医学, 49(2), 176-178.
- 江花昭一 1996 ライフスタイルから見た気管支ぜん息;成人中期. 呼吸器心身医学, 13(1), 57-60.
- 馬場実, 向山徳子, 宮林洋子他 1996 小児気管支喘息における心身症の臨床病態と疫学に関する研究. 厚生省精神・神経疾患研究;平成7年度研究報告心身症の臨床病態と疫学に関する研究, 45-47.
- 石川俊男, 宮城英慈, 苅部正巳他 1996 胃・十二指腸潰瘍の臨床病態と疫学に関する研究. 厚生省精神・神経疾患研究;平成7年度研究報告心身症の臨床病態と疫学に関する研究, 99-105.
- 富岡光直, 川村則行, 杉江征, 石川俊男 1997a 労働者用ストレス評価尺度の作成. 第13回日本ストレス学会学術総会抄録集, p100.
- 富岡光直, 川村則行, 杉江征, 石川俊男 1997b 労働者用ストレス評価尺度の妥当性と測定法に関する検討. 第5回日本産業ストレス学会抄録集, p40.
- 福西勇夫 1990 日本版General Health Questionnaire (GHQ)のcut-off point. 心理臨床, 3(3), 228-234.
- Goldberg, D. 1972 Detecting Psychiatric illness by questionnaire. *Maudsley Monograph*, 22. Oxford: Oxford University Press.
- 大坊郁夫, 中野星 1987 日本語版GHQ短縮版の有効性. 日本心理学会第51回大会発表論文集, 737.
- Berkman, Lisa F., and Breslow, Lester :森本兼義訳 1989 生活習慣と健康—ライフスタイルの科学. HBJ出版局.
- Crowne, D.P. & Marlowe, D. 1960 A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 341-354.
- 北村俊則, 鈴木忠治: 日本語版Social Desirability Scaleについて. 社会精神医, 9: 173-180, 1986.

Production of a Daily Hassles Scale for Workers (DHS-W)

労働者用日常の苛立ちごと尺度(DHS-W)の作成

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Abstract

The purpose of this research was to prepare a daily hassles scale for workers(DHS-W) and confirm its reliability and validity. 45 items having an Item-Test(I-T) correlation of .30 or higher in a preliminary survey conducted on subjects consisting of 117 workers were used. The subjects consisted of a total of 1,204 workers. The subjects were asked to reply to the items in the DHS-W along with the 12 question version of the General Health Questionnaire (GHQ12) and the questions contained in the Center for Epidemiologic Studies Depression Scale (CES-D). As a result of factor analysis, five factors were extracted from 22 items (consisting of job-related problems, personal relationships in the workplace, domestic problems, health problems and lack of time to spare). Cronbach's alpha coefficients for each factor ranged from .69 to .83. The correlation coefficient between the total score for the 22 items and the GHQ12 and CES-D used as indicators of reaction to stress were .44 ($p<.01$) and .53 ($p<.01$), respectively. These results were considered to demonstrate a part of the reliability and validity of the DHS-W.

本研究の目的は労働者用の日常苛立ち事尺度(DHS-W)を作成し、信頼性と妥当性を検討することであった。117名の労働者による予備調査で項目とテスト(I-T)の相関係数を算出し、 $r>0.30$ であった45項目を1204名の労働者が回答した。被験者はDHS-Wとともに12項目版のGeneral Health Questionnaire (GHQ12)とCenter for Epidemiologic Studies Depression Scale (CES-D)への回答を求められた。因子分析の結果22項目から5因子(仕事上の問題、職場の人間関係、家庭での問題、健康上の問題、ゆとりのなさ)を抽出した。これらの因子のクロンバックの α 係数は.69から.83であった。22項目の合計点とストレス反応の指標としたGHQ12とCES-Dとの相関係数はそれぞれ.44($p<.01$)と.53($p<.01$)であった。これらの結果はDHS-Wの信頼性と妥当性を示していると考えられた

Introduction

During the course of the daily lives of workers, events related to their jobs are likely to cause stress since they are involved with the individual's abilities or income. Consequently, when considering worker health, previous research

has focused on assessing stressful situations relating to work²⁾⁸⁾¹¹⁾¹⁵⁾.

However, since people lead various daily lives, they occasionally encounter difficult situations other than those found in the workplace and these events in their daily life are liable to influence their

reaction to stress in their work situation. Iwata⁹⁾ stated that, "Rather than existing independently, stressors exist in the form of interaction with personal characteristics and stressors outside the workplace, and this distinction can sometimes be difficult." This suggests that stressors in the workplace can be affected by situations in the daily lives of workers outside the workplace. Therefore, it is believed that, even in the case of research that focuses on stressful situations in the workplace, it will be meaningful for future research on job stress to incorporate stressors experienced by workers throughout their daily lives.

In the case of assessing stress, it is necessary to distinguish between stressors, which are stimuli from the environment, and the stress response that occurs in the organism caused by those stressors. In this paper, it was decided to define these based on the concept of the psychological stress model¹²⁾⁶⁾ which assumes a cognitive mediation process as advocated by Lazarus, R.S.*²⁾. Therefore the stressor is a demand from the environment that requires an individual to deal with the situation in some way, while the stress response involves an emotional, cognitive or behavioral reaction arising within an individual in reacting to a stressor.

A stressor may be perceived as a more serious event than it actually is or it may be ignored depending on factors involving the individual that experiences it (coping ability, personality, etc.). Consequently, stressors can be divided into latent stressors and perceived stressors. Since stressors are recognized to have a latent ability to give rise to a stress response, latent stressors are used to clarify that trait. Perceived stressors are used in situations in which an individual recognizes there to be a threatening situation. For the scale which this research aimed to develop, it was decided to assess the frequency of experiencing latent stressors and

the degree of threat or aversion of perceived stressors.

The purpose of this research was to prepare a scale for multilateral assessment of stressful situations experienced by workers. The following guidelines and standards were established in the production of this scale.

1. The scale should reflect stressful experiences encountered by workers throughout their daily lives.

2. The scale should allow assessment of the degree of impact as conceptually derived from the experience frequency of latent stressors and the degree of threat of perceived stressors.

3. When composing the scale, stressors are to be classified by factor analysis based not on the experience frequency as an indicator of latent stressors, but rather on the score for degree of threat in a situation for which the individual substantially perceives its existence. Since the categories into which stressors are classified are thought to be interrelated, oblique rotation is to be selected for the rotation method in factor analysis.

4. The scale should be composed of as few items as possible. The occupational stress model should contain not only stressors, but also mental and somatic stress reactions, social support, daily habits and other psychosocial factors. Consequently, if the number of scale items becomes excessively large, there is a greater burden placed on the respondents. Therefore, items having a low degree of communality are to be omitted from the scale during factor analysis because of having a high degree of peculiarity.

5. The scale must be reliable. More specifically, the value of the alpha-coefficient that indicates the internal conformity of the

scale must be able to stand up to use as an indicator of stressor assessment.

6. The scale must be valid. Since it is predicted that a confused mental state or negative emotions will arise when stressors are experienced, it is believed that construct validity will be demonstrated provided there is a significant correlation with a scale used to assess mental state.

Methods

Subjects.

This research was conducted on 1,204 workers at three private corporations and one public organization located primarily in the Tokyo metropolitan area. The response rate was 75.2% for the company A, 81.7% for the company B, 85.0% for the company C, and 91.2% for a public organization, respectively. The subjects consisted of 849 men and 355 women. Their average ages

Table 1
The numbers and mean age of subjects

	Male		Female	
	N	Mean (SD) ^{a)}	N	Mean(SD) ^{a)}
Company A (service industries)	114	42.7(10.6)	177	21.6(2.6)
Company B (service industries)	117	51.3(5.0)	48	50.3(5.0)
Company C (manufacturing industries)	559	36.9(8.2)	116	29.2(5.2)
Public organization	59	40.0(12.6)	14	30.2(10.5)
Sum	849	39.9(9.9)	355	28.3(10.4)

^{a)}Mean: Mean age, SD: Standard Deviation.

were 39.9 years and 28.3 years, respectively (Table 1). The survey was conducted under the name of an "Adult Disease Prevention Survey", and the respondents were given information in the form of feedback of the survey results. The survey forms were distributed through public health nurses and nurses, etc. one week before a regular health examination at each workplace. The forms were collected on the day of the regular health examination.

Survey Contents

The preliminary survey was conducted on a total of 70 items for evaluating stressors. These consisted of 60 items relating to daily stress of normal healthy adults as reported by Ago et al¹⁾, and 10 items considered likely to occur in the workplace as items specifically for workers. In the preliminary survey, 117 workers from one corporation (mean age: 25.8 years) replied with the experience frequency of each item. As a result, 45 items for which the correlation coefficient between the total score for the 70 items and each item (I-T correlation) was .30 or more were used in this research. The respondents indicated the frequency at which they experienced each event within the past year (experience frequency score, EF score) using a five point Lickert scale ranging from not experiencing at all (0 points) to experiencing extremely frequently (4 points). Moreover, the respondents also replied whether or not they felt those events they experienced to be irritable, troublesome or threatening (degree of threat score, DT score) using a five point Lickert scale ranging from not being irritable at all (0 points) to being extremely irritable (4 points). The product of multiplying the EF score by the DT score was calculated as the impact score for each stressor.

The Japanese version of the General Health Questionnaire (GHQ)¹³⁾ is a scale developed by Goldberg⁵⁾ to obtain objective information relating to mental illness. Although on several occasions there are condensed versions that contain fewer than the 60 items of the original version, the shortest, 12-item version (GHQ12) was used in this survey. The study have been conducted on the clinical validity of the Japanese language version⁴⁾. The best cut-off point that differentiated the healthy population from the patients with psychiatric symptoms was three. Since scoring in this research was performed according to the GHQ method in

which scores of 0 or 1 point are converted to "no problem (0)" while scores of 2 or 3 points are converted to "problem exists (1)", the scores ranged from 0 to 12 points. This scale was used to assess 718 of the subjects from one corporation and one organization.

The Center for Epidemiologic Studies Depression Scale (CES-D) is a self-assessment type of scale for depression developed by Radloff¹⁶⁾. The study of the reliability and validity of the Japanese language version was conducted by Shima et al¹⁷⁾. The reliability coefficient with split half method was .794 for the healthy population. Regarding the concurrent validity, the correlation coefficients with Zung's Self-rating Depression Scale¹⁹⁾ were .733 for the healthy population and .619 for the patients with psychiatric symptoms. The scale consists of 20 items representing symptoms of depression, and subjects reply by selecting from among four choices for each item consisting of less than 1 day (0), 1 to 2 days (1), 3 to 4 days (2) and 5 days or more (3) within the past week, resulting in a score range of 0 to 60 points. This scale was used to assess 190 workers from one corporation.

Processing of Results

The SPSS statistics package was used for the statistical analysis of results consisting of factor analysis and correlation analysis.

Results

Factor Analysis of Stress Evaluation Items

Analysis was performed on 812 survey subjects who responded correctly to 45 questions relating to evaluation items.

Factor analysis was performed on the DT score of 45 items for worker's stressors. However, since the DT score becomes a null value when the EF score is 0, the number of valid subjects ends up

being reduced. In order to avoid this, a MEANSUB command was used that replaces null values with the mean value of a variable when calculating correlation matrix. In factor analysis, five factors that could be interpreted by the principal factoring method with the 45 items were extracted and subjected to oblique rotation. Items having communality of .30 or less were omitted one item at a time to ultimately extract five factors from 22 items. The factor loading after rotation along with the correlation coefficient with each factor are shown in Table 2.

For factor 1, since "work not progressing" and "failures and problems on the job" had high factor loadings, this was interpreted as being related to "Work-related problems". The alpha-coefficient of the five items for factor 1 was .81. For factor 2, since the factor loads were high for the items of "arguments and confrontations with people in the workplace or at school" and "do not get along well with others", this was interpreted as being a factor relating to "Personal relationships in the workplace". The alpha-coefficient of the five items for factor 2 was .75. For factor 3, since the factor loads were high for the items of "difference of opinion with family members" and "unable to discuss true feelings to family members", this was interpreted as being a factor relating to "Domestic problems". The alpha-coefficient of the 4 items for factor 3 was .69. For factor 4, since the factor loads were high for "concern over personal health" and "physical pain in the legs and lower back and so on", this was interpreted as being a factor relating to "Health problems". The alpha-coefficient of the 3 items for factor 4 was .73. For factor 5, since factor loads were high for the items of "irregular lifestyle" and "insufficient sleeping time", this was interpreted as being a factor relating to "Lack of time to spare". The alpha-coefficient of the 5 items for factor 5 was .83.

The correlation coefficients between the five extracted factors are shown in Table 3. These correlation coefficients were significant for all combinations ($F(1, 1202) = 73.5-422.5, p < .01$). The correlation coefficients were particularly high between "Work-related problems" of factor 1 and "Personal relationships in the workplace" of factor 2 at $r = .51$, between "Domestic problems" of factor 3 and "Health problems" of factor 4 at $r = .41$, and

between "Health problems" of factor 4 and "Lack of spare time" of factor 5 at $r = .45$.

Correlation Between DHS-W and Mental State

The correlation coefficients with CES-D and GHQ12 were calculated for EF score and impact score in the form of the DHS-W of the 22 items remaining as a result of factor analysis (Table 4). Analyzed subjects consisted of 915 survey subjects who responded correctly to 22 items (Table 5).

Table 2
Factor analysis ^{a)b)} of DHS-W and Cronbach's coefficient alpha for each factor

	Factor1	Factor2	Factor3	Factor4	Factor5	Community	
Factor 1 Work-related problems; $\alpha = 0.81$							
26 Work not progressing	.64	.71	.10	.45	.02	.24	.03 .25 .02 .30 .52
27 Failures and problems on the job	.51	.65	.21	.51	.07	.30	.05 .28 .01 .29 .48
29 Concern over job role and responsibility	.48	.62	.18	.49	.09	.32	.10 .32 .00 .30
							.45
25 Heavy work load	.44	.59	.01	.36	-.01	.20	-.00 .30 .41 .57 .50
24 Dissatisfaction with job contents	.40	.60	.19	.49	.04	.29	.06 .34 .20 .45 .46
Factor 2 Personal relationships in the workplace; $\alpha = .75$							
1 Arguments and confrontations with people in the workplace or at school	-.00	.31	.68	.65	-.08	.17	.06 .21 -.06 .15 .43
5 Do not get along well with others	.00	.33	.65	.65	.05	.26	-.05 .18 -.01 .18 .43
2 Reprimanded by another person	.06	.35	.56	.60	-.01	.22	.03 .21 -.02 .19 .36
30 Problems with personal relationships in the workplace	.11	.41	.56	.64	.06	.30	.03 .25 -.03 .21 .42
6 Having to meet with people do not get along with	-.01	.29	.51	.54	.04	.24	-.04 .20 .14 .28 .31
Factor 3 Domestic Problems; $\alpha = .69$							
42 Differences of opinion with family members	-.07	.14	.05	.25	.66	.64	-.10 .21 .10 .21 .42
41 Unable to discuss true feelings to family members	-.06	.14	.06	.25	.58	.60	.01 .27 .04 .19 .37
40 Concern over personal and family future	.15	.30	-.04	.27	.55	.62	.14 .38 -.03 .21 .42
39 Concern over children and family	.06	.16	-.03	.18	.54	.54	.06 .24 -.10 .07 .30
Factor 4 Health problems; $\alpha = .73$							
34 Concern over personal health	.02	.21	-.01	.25	.03	.34	.75 .76 -.01 .35 .58
33 Physical pain in the legs, low back and so on	-.02	.17	.03	.23	-.06	.23	.68 .68 .07 .36 .48
36 Sense of physical decline	.04	.22	-.00	.24	.11	.35	.54 .62 .06 .34 .40
Factor 5 Lack of time to spare; $\alpha = .83$							
12 Irregular lifestyle	-.06	.26	.02	.26	-.02	.21	.14 .48 .79 .83 .71
11 Insufficient sleeping time	-.08	.23	.05	.26	.03	.24	.12 .44 .69 .73 .56
14 Returning home late	.23	.41	-.07	.22	.01	.18	-.03 .29 .63 .67 .49
13 Too busy and no time for relaxation	.27	.30	.02	.34	.01	.23	-.00 .35 .60 .71 .57
17 Having to get up early	-.11	.17	.08	.24	.08	.25	.11 .37 .52 .57 .36
The percentage of the variance attributable to each factor							
	8.49	10.01	7.10	7.47	12.37		
The cumulative percentage	8.49	18.50	25.60	33.07	45.44		

^{a)}Factor analysis performed using the principal factoring and Oblimin rotation method.

^{b)}Factor loadings and correlation coefficients between items and factors were placed side by side.

Table 3
Inter-Factor Correlation

	Work related problems	Personal relationships ^{a)}	Domestic problems	Health problems
Personal relationships ^{a)}	.51**			
Domestic problems	.26**	.36**		
Health problems	.26**	.32**	.41**	
Lack of time to spare	.36**	.30**	.24**	.45**

**p<.01 ^{a)}Personal relationship in the workplace

Table 4
The correlation between DHS-W and CES-D and between DHS-W^{a)} and GHQ12

Sum of	Work related problems	Personal relationships ^{a)}	Domestic problems	Health problems	Lack of time to spare	of to
22 items						
CES-D with EF score ^{b)} (N=115)	.32**	.36**	.39**	.21*	.19*	.39**
Impact score ^{c)} (N=115)	.35** .44**	.35**	.44**	.20*	.29**	
GHQ12 with EF score ^{b)} (N=591)	.44**	.38**	.24**	.25**	.28**	.47**
Impact score ^{c)} (N=591)	.50** .53**	.41**	.28**	.28**	.36**	

^{a)}The version of 22 items.

^{b)}EF score: the Experience Frequency of the stressors score.

^{c)}Impact score = (EF score) X (DT score). DT score: the Degree of Threat for experienced stressor score.

^{d)}Personal relationship in the workplace

**p<.01, *p<.05

Table 5
The number of subjects responded correctly to 22 items of DHS-W

Age	Male	Female	Total
18-29	127	158	285
30-39	263	36	299
40-49	179	18	197
50-	112	22	134
Total	681	234	915

Table 6
The percentage of subjects experiencing each stressor and of subjects felt
averse to the experienced stressor

threat	Frequency		Degree of	
	Mean (SD) ^{a)}	% ^{b)}	Mean (SD)	% ^{c)}
Factor 1 Problems relating to work				
Work not progressing	1.80 (1.10)	87.0	2.19 (1.02)	97.9
Failures and problems on the job	1.51 (0.95)	89.2	2.16 (1.03)	97.2
Concern over job role and responsibility	1.72 (1.14)	86.8	2.07 (1.05)	97.5
Heavy work load	2.00 (1.23)	88.4	1.96 (1.09)	94.4
Dissatisfaction with job contents	1.80 (1.06)	90.7	2.07 (1.06)	96.4
Factor 2 Personal relationships in the workplace				
Arguments and confrontations with people in the work place	1.20 (0.88)	80.3	1.88 (0.99)	96.1
Do not get along well with others	1.25 (0.84)	84.5	1.94 (0.96)	97.9
Reprimanded by another person	1.23 (0.85)	83.3	1.92 (1.03)	95.9
Problems with personal relationships in the workplace	1.49 (1.08)	83.3	2.05 (1.02)	98.2
Having to meet with people do not get along with	1.43 (0.98)	84.6	1.92 (1.03)	96.0
Factor 3 Domestic Problems				
Differences of opinion with family members	1.01 (0.99)	65.0	1.61 (1.01)	90.9
Unable to discuss true feelings to family members	0.82 (0.99)	52.5	1.59 (1.01)	90.6
Concern over personal and family future	1.58 (1.11)	84.5	1.92 (1.03)	97.2
Concern over children and family	1.17 (1.08)	66.8	1.85 (0.97)	95.9
Factor 4 Health Problems				
Concern over personal health	1.31 (1.04)	78.1	1.71 (0.99)	94.1
Physical pain in the legs, low back and so on	1.23 (1.12)	69.8	1.61 (1.09)	86.9
Sense of physical decline	1.52 (1.03)	84.3	1.48 (1.00)	86.6
Factor 5 Lack of spare time				
Irregular lifestyle	1.93 (1.22)	89.4	1.66 (1.11)	87.8
Insufficient sleeping time	1.99 (1.21)	89.4	1.81 (1.11)	91.3
Returning home late	2.18 (1.26)	91.0	1.70 (1.09)	89.6
Too busy and no time for relaxation	2.09 (1.23)	90.3	2.06 (1.09)	96.2
Having to get up early	1.67 (1.09)	89.8	1.41 (1.17)	76.8

^{a)}Mean: Mean value of evaluation on frequency. SD: Standard Deviation. The number of subjects was 91 who responded correctly to 22 items.

^{b)}%: The percentage of subjects who evaluated 1 point (experienced rarely) and above on the frequency scales.

^{c)}Mean: Mean value of evaluation on aversion. SD: Standard Deviation.

^{d)}%: The percentage of subjects who evaluated 1 point (experienced rarely) and above on the frequency scales and evaluated 1 point (being a little irritable) and above on the aversion scales.

The correlation coefficients between CES-D and the EF scores of five subordinate scales ranged from .19 ($p<.05$) to .39 ($p<.01$), and all demonstrated significant correlations. The relationship with Domestic problems was the strongest. The correlation coefficient for the total of the 22 items was .39 ($p<.01$). The correlation coefficients with the impact scores of the five subordinate scales ranged from .20 ($p<.05$) to .44

Appendix 22 items of DHS-W in Japanese

Factor 1 仕事上の問題

- 26 仕事が進まないこと
- 27 仕事での失敗やトラブル
- 29 仕事の役割や責任についての悩み事
- 25 仕事の量が多いこと
- 24 仕事内容の不満

Factor 2 職場の人間関係

- 01 職場や学校での人との口論や対立
- 05 周囲の人とうまくいかなかったこと
- 02 人から怒られたこと
- 30 職場の人間関係の問題
- 06 気の合わない人とのつきあい

Factor 3 家庭での問題

- 42 家族との意見の不一致
- 41 家族に自分の気持ちを話せないこと
- 40 自分や家族の将来についての心配事
- 39 子どもや家族についての心配事

Factor 4 健康上の問題

- 34 自分の健康状態についての心配事
- 33 足腰などの体の痛み
- 36 体の衰えを感じた事

Factor 5 ゆとりのなさ

- 12 不規則な生活
- 11 睡眠時間が十分取れないこと
- 14 帰宅時間が遅いこと
- 13 多忙でゆとりの時間が持てないこと
- 17 早起ししなければならないこと

($p<.01$), and all demonstrated significant correlations, with the relationship with Domestic problems being the strongest. The correlation coefficient for the total of the 22 items was .44 ($p<.01$).

The correlation coefficients between GHQ12 and the EF scores of five subordinate scales ranged from .24 ($p<.01$) to .44 ($p<.01$), and all demonstrated significant correlations. The relationship with Work-related problems was the strongest. The correlation coefficient for the total of the 22 items was .47 ($p<.01$). The correlation coefficients with the impact scores of the five subordinate scales ranged from .28 ($p<.01$) to .50 ($p<.01$), and all demonstrated significant correlations, with the relationship with Work-

related problems being the strongest. The correlation coefficient for the total of the 22 items was .53 ($p < .01$).

Daily Hassles Experienced by Workers

The mean values of EF scores of all subjects for hassles of the 22 items along with the percentages of subjects that experienced those events, and the mean values of DT scores with respect to those persons that experienced those events along with the percentages of subjects that recognized those events to be sources of a threat are shown in Table 6.

Those daily events frequently experienced by workers demonstrated the highest percentages for Work-related problems such as "dissatisfaction with job contents" and "failures and problems on the job", and Lack of spare time such as "Returning home late" and "too busy and no time for relaxation". These were experienced by roughly 90% of the subjects. Mean EF score also exhibited values approaching 2 points (experienced occasionally). These were followed by Personal relationships in the workplace at about 80%, and Health problems experienced by about 70% of the subjects. With respect to Domestic problems, the percentages of subjects experiencing such problems varied considerably from 52.5% to 84.5% depending on the item, and the mean experience frequency was roughly 1 point (experienced rarely).

With respect to DT score, the mean aversion for items included in the factors of Work-related problems and Personal relationships in the workplace was about 2 points (felt to be a source of aversion), and the percentage of subjects that felt even a slight sense of aversion exceeded 95% for nearly all items. Although the percentage of subjects that experienced with respect to Domestic problems was the lowest among the five factors,

more than 90% of those subjects that experienced such an event perceived it to be a source of aversion. With the exception of "having to get up early" (76.8%), all items relating to the remaining factors of Health problems and Lack of spare time were perceived as sources of aversion by at least 85% of the subjects.

Discussion

Reliability and Validity

Each of the factors demonstrated an alpha-coefficient, which is an indicator of internal conformity, within the range of .69 to .83, indicating a high degree of similarity between the items of each scale. Each subordinate scale was therefore considered to be able to stand up to evaluation of stressful situations, and a portion of the reliability of the DHS-W was indicated. In the stress model that emphasizes cognitive mediation as represented by Lazarus, it is believed that a stress response is induced when a stressor is evaluated as being threatening. The DHS-W is a scale that was produced based on this theory. The experience frequency of latent stressors and the degree of threat of perceived stressors were scored, and the degree of impact of a certain stressor on an individual was quantified from these two scores. Consequently, by clarifying that this impact score has a significant relationship with the degree of confusion of mental state, which is one aspect of reaction to stress, the validity of the DHS-W is believed to be indicated in the form of a scale that evaluates stressors experienced by workers. According to the results, the impact scores of the DHS-W were found to correlate significantly with the CES-D and GHQ12, which are scales for evaluating mental state, thereby demonstrating the validity of this scale for evaluating stressors experienced by workers. Moreover, the impact scores tended to demonstrate generally higher

correlation coefficients than experience frequency scores. In other words, instead of attempting to explain reaction to stress only in terms of the experience frequency of latent stressors that are likely to cause a latent reaction to stress, the rate at which stress response can be explained was found to increase by multiplying experience frequency by the degree to which a stressor is or is not threatening. This result coincided with the stress model that emphasizes the cognitive appraisal of the individual in the form of whether or not a stressor is felt to be threatening. This finding also supports the validity of this scale (construct validity).

The DHS-W Subordinate Scales and Mental State

The five factors of the DHS-W exhibited different patterns with respect to the strength of the relationship with the CES-D or GHQ12. In the relationship with the CES-D, factor 3, "Domestic problems", demonstrated the strongest relationship. It has been pointed out in several studies¹⁰⁾¹⁸⁾ that the emotions produced vary depending on the type of stressor. Moreover, it has also been indicated that depression has a stronger relationship with major life events than daily hassles³⁾¹⁴⁾. This present study also found such a relationship. Domestic problems are therefore considered to demonstrate a relatively strong relationship with depression, and be an important factor comparable to major life events with respect to depression as was also observed in the previous studies.

In the case of the GHQ12, stressors in the workplace (Work-related problems and Personal relationships in the workplace) demonstrated a strong relationship. Rather than being a scale for evaluating the state of specific emotions in the manner of depression and anxiety, the GHQ12 is a scale for measuring the degree of mental stability,

and is also used to evaluate the degree of impairment of social activities. The strong relationship of stressors in the workplace with this scale may suggest that these stressors have an important effect on job performance as well.

Although "lack of spare time" exhibited the weakest relationship among the five factors with respect to CES-D, it also demonstrated the largest difference between experience frequency scores ($r = .28$) and impact scores ($r = .36$), and was most strongly affected by cognitive factors (degree of aversion). Similar findings were observed with respect to the relationship with the GHQ12. The difference between experience frequency scores ($r = .19$) and impact scores ($r = .29$) was the largest among the five factors, and it was also most strongly affected by cognitive factors. "Lack of spare time" includes items that can be interchanged with daily habits. Differences with respect to whether this type of situation becomes a stressor or whether workers grow accustomed to it depends on whether they are accustomed to their daily life or feel opposition towards it. In particular, although "having to get up early" is experienced by 89.8% of workers, the percentage of workers who perceive this to be a hassle is only 76.8%, the lowest value observed among all 22 items. On the basis of this finding as well, this factor can be understood to be strongly affected by cognitive factors.

Daily Hassles Experienced by Workers

A scale was composed consisting of 22 items that included five factors using factor analysis. The five factors included two factors for evaluating stressors in the workplace (Work-related problems and Personal relationships in the workplace), one factor for evaluating stressors in the home, one factor for evaluating stressors coming from health, and one factor for evaluating a Lack of spare time caused by various factors.