

Childhood General Mental Ability and Midlife Psychosocial Work Characteristics as Related to Mental Distress, Neck/Shoulder Pain and Self-rated Health in Working Women and Men

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Abstract: Childhood General Mental Ability and Midlife Psychosocial Work Characteristics as Related to Mental Distress, Neck/Shoulder Pain and Self-rated Health in Working Women and Men: Cornelia WULFF, et al. Department of Psychology, Stockholm University, Sweden—Psychosocial work characteristics including high demands, lack of control and poor social support have consistently been linked to poor health as has poor general mental ability (GMA). However, less is known about the relationships between stable individual factors such as GMA, psychosocial work characteristics and health. **Objective:** The present study investigated how childhood mental ability and psychosocial work characteristics relate to health in terms of mental distress, neck/shoulder pain (NSP) and self-rated health (SRH). **Methods:** Data on childhood GMA, occupational level, self-reports of demands, control and social support and health (mental distress, NSP and SRH) in midlife came from working women (n=271) and men (n=291) included in a Swedish school cohort. Hierarchical regression analyses, controlling for occupational level, were used to examine associations between childhood GMA, self-reports of high demands, low control and poor social support and the three health indicators. Taking into consideration the gendered labor market and variations in health patterns between women and men, gender specific analyses were performed. **Results:** There were no significant associations between childhood GMA and health indicators. Further, there were no significant interactions between GMA and psychosocial work factors. As regards the strength of the associations between GMA, psychosocial work factors and health,

no consistent differences emerged between women and men. **Conclusions:** In a cohort of healthy and working middle-aged women and men, self-reports of current psychosocial work characteristics seem to be more strongly linked to health, than are stable childhood factors such as GMA.

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Key words: Gender, General mental ability, Health, Psychosocial work characteristics

Consistent findings show that psychosocial work characteristics including high demands, low control and poor social support have negative health effects^{1,2}. For instance, poor psychosocial work characteristics have been associated with cardiovascular disease^{1,2}, depression³ and musculoskeletal disorders⁴. Research on the linkages between psychosocial work characteristics and various health outcomes has also shown that the relationships can differ between women and men^{5,6} and between different occupational levels^{6–8}. Although there is a vast number of studies of psychosocial work characteristics and health, with many of these including personality characteristics, few investigate linkages between stable individual characteristics such as general mental ability (GMA), work and health^{9,10}. Thus little is known about the associations between GMA, psychosocial work characteristics and health in working adults.

This study sets out to investigate how childhood GMA and psychosocial work characteristics relate to health outcomes in a school cohort of middle-aged working women and men. In view of many previous studies focusing on single health outcomes, the present study includes three health indicators, namely mental distress, musculoskeletal disorders in terms of neck and shoulder pain (NSP) and self-rated health (SRH). These health indicators were selected since they have been investigated separately in previous occupational research^{3,4,11}.

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Psychosocial work characteristics and health

There are several models describing how psychosocial factors at work relate to health. Of these, the job demand-control model^{1, 12)} has come to dominate the research on occupational health. This model assumes that job demands, decision latitude and social support at work are central to health. According to this model, different combinations of job demands and control result in four different work situations that have diverse health effects. The most detrimental effects are associated with a work situation characterized by job strain, which is defined as the combination of high job demands and low decision latitude¹⁾. However, reviews show that the empirical findings are inconsistent^{13–16)}. Moreover, there are no consistent findings showing that social support is a general buffer against ill health resulting from high demands and low control^{3, 14, 15)}. The inconsistent empirical support for the model's assumed interactions between demands, control and social support has led to these three factors being analyzed separately with respect to health indicators¹⁶⁾.

Previous research on demands, control and social support has shown differences between women and men but also between occupational levels. Typically, women report lower control^{17, 18)}, and this gender difference is more pronounced in lower occupational levels¹⁷⁾. For demands, gender differences are seldom found, while findings relating to social support are inconsistent^{17, 18)}.

Psychosocial work characteristics, including high demands, low control and poor social support have been linked to different health outcomes, involving general mental health problems such as mental distress^{3, 19)} and common physical health problems including musculoskeletal disorders in the neck and shoulders^{4, 20)}. The associations between psychosocial work characteristics and common mental health problems including mental distress, have been systematically reviewed^{3, 19)}. These studies show clearly that high demands, low control and poor social support are associated with mental disorders¹⁹⁾, common mental health problems including mental distress³⁾, depressive symptoms³⁾ and depression³⁾. As regards differences between women and men, the effects of psychosocial work characteristics on mental health seem stronger for men^{3, 19)}.

Systematic reviews^{4, 20)} of research on psychosocial work characteristics and musculoskeletal disorders show that high demands and low control are associated with pain in both neck and shoulders. However, it is unclear whether there are any differences in the associations between demands and control respectively and NSP in women and men²⁰⁾. The findings relating to social support are more straightforward: Longitudinal studies show an association with NSP and apparently these associations do not vary systematically between women and men²⁰⁾.

Research including SRH as a measure of general health,

shows clearly that poor psychosocial work characteristics, including high demands, low control and poor social support, are related to a poor SRH^{21, 22)} with findings being similar for women and men²¹⁾. Additionally, a low occupational level has been linked to a poor SRH^{21, 22)}.

General mental ability

Different factors, including childhood experiences, personality and GMA, mould an individual's trajectory through life. Of these factors, GMA has been identified as one of the most stable individual characteristics^{23, 24)}. Research has consistently shown that GMA is central to individual adjustment, achievement, education, occupational level, work life experiences and health^{9, 25, 26)}. Typically, a high GMA is associated with better outcomes in these areas^{25–27)}. Supposedly a high GMA facilitates dealing with everyday life and its complexities. While GMA is considered a necessary condition for successful outcomes, it is not sufficient^{9, 27)}; environmental factors also play an important role.

The linkages between GMA and health outcomes are well-researched and show that a poor GMA is associated with a higher risk for disease and mortality^{28–30)}. Recent research suggests that the associations between GMA and health outcomes vary between women and men^{28, 31)}, which may result from women and men pursuing different educational and work careers, with men often being found at higher occupational levels⁹⁾.

As regards GMA and occupational level, research shows a consistent association: Individuals with a high GMA are often found at high occupational levels. However, low occupational levels do include individuals with a high GMA, while individuals with a low GMA are seldom found at higher occupational levels^{9, 25)}. Also, GMA is related to social status and psychosocial environment in both childhood and adulthood^{26, 32, 33)}.

Most research on GMA within the occupational field focuses on job performance^{9, 25)}. Findings show that a high GMA is related to a better job performance. Importantly, the association between GMA and job performance holds even when accounting for different personality factors, including neuroticism. Consequently, GMA is considered a more important factor in the workplace than are personality characteristics⁹⁾. Also, a high GMA is associated with higher job satisfaction: Individuals with a high GMA hold jobs that allow them to use and increase their competence, develop an interest in their work and allow freedom⁹⁾. Although there is disagreement regarding the practical role of GMA in the occupational arena²⁵⁾, many researchers underscore the importance of GMA in a changing working life that emphasizes individual characteristics and the ability to manage complex situations in multiple contexts^{9, 25, 27)}.

Taken together, the findings relating GMA to the formation of individuals' occupational trajectories suggest

a selection into work with GMA being one of several factors explaining what kind of work situation an individual ends up in. There is thus reason to include GMA in research on psychosocial work characteristics and health. In the present study, working individuals with a high GMA were assumed to have better cognitive resources for dealing with strenuous psychosocial work situations. This has implications for health insofar that working individuals with a high GMA will have better health than others.

Present study

The aim of this study was to investigate how childhood GMA and psychosocial work characteristics in terms of high demands, low control and poor social support in midlife relate to self-reports of health in terms of mental distress, NSP and SRH, in working women and men belonging to a school cohort.

Given that there are gender differences in occupational level, psychosocial work characteristics and health, all hypotheses were tested separately for women and men. Also, previous research has made it clear that the associations between GMA and health differ for women and men^{3, 20}. These differences also seem to hold for associations between psychosocial work characteristics and health, although the findings vary depending on the psychosocial factors and health indicators studied^{3, 19, 20}. In addition, research has shown that occupational level, or social status, is important for psychosocial work characteristics and health^{7, 22, 33}. For instance, individuals with a high occupational level often report more control than do those with a lower occupational level. There are similar differences in health: Individuals with a high occupational level generally have better health than do those with a lower occupational level. In view of this, all hypotheses were tested controlling for occupational level.

Specifically the following three hypotheses were tested: 1) high demands, low control and poor social support respectively are associated with poor health in terms of higher levels of mental distress, more NSP and a poorer SRH; 2) a higher GMA is associated with better health (lower levels of mental distress, less NSP and a better SRH); and 3) GMA moderates the effects of high demands, low control and poor social support respectively on health so that associations between psychosocial work characteristics and health are weaker for individuals with a higher GMA than for those with a weaker GMA.

Method

Participants and data collection

Data came from middle-aged working women and men participating in the Swedish longitudinal research program Individual Development and Adaptation (IDA)³⁴. Data collections have been performed since an entire school

cohort of 10-year old children (N=1,102; 557 girls/545 boys) in the third grade in the city of Örebro, Sweden, were invited to participate in the study in 1965. The original school cohort was representative for Swedish conditions³⁵. At midlife follow-up, the cohort was still fairly representative of the Swedish population as a whole as regards demographic factors such as marital status, number of children and salary, while the educational level was somewhat higher^{32, 36, 37}. Attrition has been low: 85% of the women and 82% of the men participated in midlife follow-ups³².

The present study makes use of GMA data collected in the third (age 10) and sixth (age 13) grades and midlife follow-up data (1998 for women/age 43 and 2003 for men/age 48). Of the 1,102 children, 502 girls and 500 boys completed the GMA assessment in the third grade, while 483 girls and 471 boys completed the assessment in the sixth grade. GMA data from the third and/or sixth grades were available 1,083 children (544 girls and 539 boys). At midlife follow-up, 770 individuals being part of the school cohort were engaged in gainful employment. Childhood GMA was available for 697 of these working individuals. However, missing data on occupational level, psychosocial work characteristics and health indicators resulted in an analytic sample of 562 individuals (271 women/291 men). A comparison of GMA and adult health in terms of SRH shows no significant differences in GMA ($t=1.80$, $p>0.05$) between the cohort (GMA: M=50.0, SD=10.0) and the study sample (GMA: M=50.9, SD=9.5). However, as expected, the study sample was significantly healthier ($t=2.73$, $p<0.01$; sample: M=4.2, SD=0.75; cohort: M=4.1, SD=0.90) than the total cohort.

Measures

Information on age and gender was retrieved from the IDA database.

General mental ability. Childhood GMA was assessed using the Swedish DAA test (Differential Ability Analysis)³⁸. The GMA measure includes verbal, inductive, spatial, and general intelligence scores. For each, the T-standardized age 10 and age 13 scores were averaged. The final score was T-standardized. Since data on GMA for the same tests were available at age 10 and age 13, the mean of the scores of these two ages were used to maximize the reliability. According to Hännqvist³⁸, the reliabilities are about 0.90 for the verbal, inductive and spatial abilities and 0.95 for general mental ability. Only the total scale scores were retained in the IDA database, and consequently, no reliability estimates are available.

Occupational level. Occupational level was coded using the Swedish Standard Classification of Occupations (SSYK)³⁶, which is the Swedish version of ISCO-88 (COM) (International Standard Classification of Occupations, 1988, EU version, ILO). SSYK shows the level of education required to perform a job well. Based

on the SSYK, a classification was performed according to the educational level required for a specific vocation. To increase statistical power, this study used an elaborated SSYK measure³², with 0 indicating a low educational level (maximum upper secondary level) and 1 indicating a higher educational level (higher or further education).

Psychosocial work characteristics. Questions relating to demands, control and social support at work came from subscales included in a previously validated self-report inventory³⁹⁻⁴¹. This inventory draws heavily on the Karasek and Theorell model^{1, 12} but includes additional factors allowing for a more complex analysis of the work environment. Previous studies have reported satisfactory reliabilities (above 0.80) and discriminant validity of the different subscales^{39, 40}. In this study, *high demands* were measured using seven questions covering workload, time pressure and incompatible demands (e.g., Do you have so much to do that it impacts negatively on your possibilities to carry out your work effectively?)^{39, 40}. *Low control* was measured through six questions covering control over work and possibility to organize tasks (e.g., I decide how much time I spend on different work tasks)^{39, 40}. *Poor social support* was measured using six questions including support and help from colleagues (e.g., Do you get help from others when facing problems?)^{39, 40}. All items were rated along a 5-point response format ranging from 1 to 5. After reversing items, a mean score was computed for each measure, with high scores indicating a strenuous work situation. In the present study, reliabilities (Cronbach's alpha) were as follows: demands 0.82, control 0.88 and social support 0.85.

Health indicators. Self-reports on health included measures of mental distress, NSP and SRH. *Mental distress* was assessed using three questions covering feelings of depression, problems sleeping and worries. These items are slightly elaborated versions of questions included in Swedish national surveys⁴², in which they have been found to have a satisfactory reliability. Here, items were rated along a four-point response format ranging from 1 to 4. A mean score was computed, with high scores indicating high levels of distress. In the present study, Cronbach's alpha for the mental distress measure was 0.75. NSP was measured using two previously validated items asking whether the respondent had or had never experienced pain in the neck and shoulders (0=no, 1=yes)⁴³. A mean score ranging from 0 (no pain) to 2 (pain in both neck and shoulder areas) was computed. *SRH* was assessed using a single item asking respondents to rate their current health status along a five-point scale ranging from 1 (excellent) to 5 (very poor)⁴⁴. Ratings were recoded so that high scores indicate excellent health.

Statistical analyses

After calculating descriptive statistics, *t*-tests were

performed to examine gender differences. Then intercorrelations (Pearson coefficients) between variables were computed separately for women and men. To test the hypotheses, hierarchical multiple regression analyses were performed separately for women and men for each health indicator. These analyses were performed controlling for occupational level. The main effects of GMA, high demands, low control and poor social support were included in one step to clarify their associations with each health indicator. Finally, the interactions between GMA and psychosocial work characteristics (GMA*high demands, GMA*low control and GMA*poor social support) were included to allow examination of their effects on each health indicator. To avoid multicollinearity, the product of the variables' centered means were used to create interaction terms⁴⁵. Potential differences in regression weights between women and men were tested by performing a chi-square difference test in Lisrel 8.8⁴⁶ with regression weights being constrained to be equal for women and men.

Results

Table 1 presents descriptive statistics for all variables, results from tests of gender differences and Pearson correlations for women and men. Significant gender differences were found for control ($p<0.001$), social support ($p<0.05$) and NSP ($p<0.001$), with women having lower control ($M=2.62$, $SD=1.00$ for women; $M=2.11$, $SD=0.74$ for men) and more NSP ($M=1.38$, $SD=0.77$ for women; $M=1.13$, $SD=0.81$ for men) and men having poorer social support ($M=2.40$, $SD=0.76$ for women; $M=2.52$, $SD=0.77$ for men).

The hierarchical regression analyses in Table 2 show that occupational level had no significant association with mental distress, neither for women nor for men. Adding GMA and measures of psychosocial work characteristics in Step 2 increased the amount of explained variance significantly for women and men. High demands were associated with higher mental distress in both women and men, but the association was significantly stronger for men. Also, poor social support was associated with higher mental distress but in women only. However, this gender difference was not statistically significant. Finally, the interaction terms added in Step 3 were not statistically significant, neither for women nor for men.

As regards NSP, occupational level had no significant association with NSP. However, adding GMA and psychosocial work characteristics in Step 2 increased the amount of explained variance significantly for men but not for women. Specifically, high demands were associated with more NSP but only in men. Adding the interaction terms in the final step did not increase the amount of explained variance, and none of the interaction terms were significantly associated with NSP.

A high occupational level was significantly associated

Table 1. Descriptive statistics for childhood general mental ability, psychosocial work characteristics and health indicators for women and men, along with results of tests of gender differences and intercorrelations between measures for women (above diagonal) and men (below diagonal), respectively

	Women		Men		<i>t</i> (560)	1	2	3	4	5	6	7
	M	SD	M	SD								
1. GMA	51.22	9.11	50.62	9.93	-0.75	-	0.17**	-0.00	0.14*	0.06	0.09	-0.01
<i>Psychosocial work characteristics</i>												
2. High demands	2.37	0.88	2.29	0.82	-1.14	0.16**	-	0.29**	0.32**	0.19**	0.05	-0.27**
3. Low control	2.62	1.00	2.11	0.74	6.83***	-0.05	0.22**	-	0.31**	0.11	0.08	-0.19**
4. Poor social support	2.40	0.76	2.52	0.77	1.98*	-0.07	0.26**	0.34**	-	0.24**	0.06	-0.12*
<i>Health indicators</i>												
5. Mental distress	1.54	0.60	1.45	0.51	1.75	0.03	0.16**	0.16**	0.10	-	0.15*	-0.18**
6. NSP	1.38	0.77	1.13	0.81	-3.81***	0.02	0.33**	0.07	0.15*	0.20**	-	-0.34**
7. SRH	4.26	0.77	4.18	0.73	-1.26	0.08	-0.21**	-0.19**	-0.25**	-0.33**	-0.22**	-

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. GMA=general mental ability; NSP=neck/shoulder pain; SRH=self-rated health. Measures: High GMA score=high GMA. Psychosocial work characteristics 1–5 (5=high load). Mental distress 1–4 (4=high levels of distress), NSP 0–2 (2=much pain), SRH 1–5 (5=excellent health).

with a good SRH in men but not in women. However, this difference between women and men was not statistically significant. Adding GMA and measures of psychosocial work characteristics in Step 2 increased the amount of explained variance, but there was no significant effect of GMA on SRH, neither for women nor for men. However, high demands were associated with a poor SRH in both women and men. Also, poor social support was associated with a poor SRH but in men only. Adding the interaction terms in Step 3 increased the amount of variance explained, but all interaction terms failed to reach statistical significance for both women and men.

Table 2 summarizes results from the last step for all hierarchical regression analyses. Analyses including the first two steps produced findings (results not shown) that were similar to those presented in Table 2. However, it should be mentioned that without the interaction terms, poor social support was associated with mental distress in men. In contrast, including the interaction terms resulted in a nonsignificant association.

Discussion

This study investigated how childhood GMA and psychosocial work characteristics including high demands, low control and poor social support relate to mental distress, NSP and SRH in middle-aged working women and men. Overall, the present findings showed no consistent effect of childhood GMA on adult health. However, associations were found between psychosocial work characteristics and health.

In line with previous research^{1,3,20} and in support of our first hypothesis, the present study showed that psychosocial work characteristics were related to all health indicators

(except to NSP in women). In showing that high demands were related to mental distress in women and men (although the association was stronger for men), the present study reproduced earlier findings^{3,19}. In line with previous research^{4,20}, high demands were related to NSP but only for men. However, the strength of the association did not differ significantly between women and men. Finally, high demands were associated with a poor SRH in both women and men.

Contrary to the systematic reviews³ available, no significant relationship emerged between low control and mental distress. Also, the present study failed to replicate previous findings^{4,20} showing linkages between low control and NSP⁴ as well as between low control and a poor SRH²².

In line with previous research³, poor social support was linked to mental distress. But here, the association emerged for women only (although the strength of the association did not differ significantly between women and men). Contrary to previous research⁴, poor social support was not associated with NSP. In line with expectations, poor social support was related to a poorer SRH, but only in men.

Although the overall findings relating to psychosocial work characteristics and health are in line with the first hypothesis, the results were most consistent for high demands, while no significant associations emerged for low control. This suggests that high demands are important for health in the group of working individuals studied here. Additionally, there were no consistent gender differences as regards the strength of the association between psychosocial factors and health indicators. This suggests that high demands are important for the health of both

Table 2. Hierarchical multiple regressions for women and men including effects of childhood GMA, psychosocial work characteristics and interactions between childhood GMA and psychosocial work characteristics, controlling for occupational level, on three health indicators (Standardized regression weights form the last step of each analysis)

	Mental distress			Women	NSP			Women	SRH	
	Women	Men	χ^2		Men	χ^2	Men		χ^2	
Step 1										
Occupational level	-0.08	-0.00	0.74	-0.07	-0.09	0.06	0.09	0.18**	1.13	
ΔR^2	0.00	0.00	-	0.00	0.00	-	0.01	0.03**	-	
Step 2										
GMA	0.06	-0.04	1.10	0.12	0.04	0.71	0.01	-0.02	0.05	
High demands	0.13*	0.33***	4.91*	0.02	0.13*	1.44	-0.25***	-0.18**	0.61	
Low control	0.00	-0.03	0.17	0.05	0.11	0.32	-0.10	-0.08	0.04	
Poor social support	0.20**	0.06	2.42	0.03	0.03	0.00	-0.02	-0.16**	2.63	
ΔR^2	0.08***	0.12***	-	0.02	0.05**	-	0.09***	0.10***	-	
Step 3										
GMA*High demands	-0.04	-0.11	0.74	-0.06	-0.05	0.01	-0.03	-0.05	0.81	
GMA*Low control	-0.01	0.00	0.01	-0.03	-0.04	0.00	-0.02	-0.05	0.07	
GMA*Poor social support	0.11	-0.06	3.38	0.03	0.07	0.22	-0.05	0.08	0.07	
ΔR^2	0.01	0.02	-	0.01	0.01	-	-0.00	0.01***	-	
R^2	0.09**	0.14***	-	0.03	0.06*	-	0.10**	0.14***	-	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. GMA=general mental ability; NSP=neck/shoulder pain; SRH=self-rated health. Measures: High GMA score=high GMA. Occupational level 0=work requires upper secondary school or similar, 1=work requires studies within higher or further education. Psychosocial work characteristics 1–5 (5=high load). Mental distress 1–4 (4=high levels of distress), NSP 0–2 (2=much pain), SRH 1–5 (5=excellent health). – Not applicable. A significant χ^2 -value means that the strength of the association was significantly different for women and men.

women and men. However, the lack of statistically significant effects of control on the health indicators can also be explained by the way it was operationalized: In contrast to the items measuring control, the items measuring demands include perceptions of negative aspects of work that, in turn, may inflate the associations between high demands and health outcomes. In addition, previous studies^{13–16} measure decision latitude through a specific job demand-control inventory, while the present study used six questions from another inventory. Although there is a conceptual overlap between these inventories and subscales in terms of item content, the operationalisations are not identical, which may explain the diverging results. However, in the present study, the reliabilities for all psychosocial factors, including control, were satisfactory.

Regarding the assessment of mental distress and NSP, many previous studies^{3, 19, 20} have used measures based on several items, which increases reliability. Ideally, such established health measures should have been used here too, but such measures were not available in the database. However, the mental distress measure used here had a satisfactory reliability. As for NSP, details on pain intensity are often included⁴³, but here, the amount of missing data on intensity was too high. Although there are shortcomings in the health measures, the present

findings replicate previous research to some extent suggesting that the health measures were fairly good.

Contrary to our second hypothesis and previous research^{28, 31}, the present study showed no consistent effect of GMA on health, neither for women nor for men. In addition, and contrary to our third hypothesis, there were no moderating effects of GMA on psychosocial work characteristics as related to health. This can be explained by attrition bias. But with attrition rates being fairly low throughout the years, the findings are more likely to result from the studied school cohort including a small and selected group of healthy middle-aged working women and men. This should be contrasted with other longitudinal studies including unemployed and people on sick leave who have a poorer health than those in gainful employment. This line of reasoning is supported by the fact that the study sample analyzed here had significantly better SRH than the whole cohort.

Other factors, including early risk factors and adult social status, have been shown to influence the effect of GMA on health^{10, 30}. Focusing exclusively on the effect of GMA, other childhood factors including parents' education that can influence both GMA and adult health were excluded. However, research¹⁰ suggests that effects on mental ill health remain even when taking into account early risk factors. Additionally, all analyses reported here

were performed controlling for occupational level, as a measure of adult status. However, the explanatory power of occupational level was low. This contradicts previous research^{7,8)} but may result from occupational level being dichotomized into two levels to maintain statistical power. This means that research on larger samples may yield different findings. However, the results may also reflect the fact that the working women and men were still fairly young and had no serious health problems reflected in the health indicators studied.

The present findings show that the experience of a strenuous psychosocial work environment in adulthood is more important to health than GMA. This suggests that the linkages between psychosocial factors at work and midlife health are more complex and perhaps related to other factors such as personality. The present study included no personality measures, which can be considered a drawback in view of potential linkages between personality factors, work and health⁴⁷⁾. However, GMA has been found to be more stable^{9, 23)} and more strongly associated with both work and health than personality measures⁹⁾.

Regarding the midlife follow-up, data on occupational level, psychosocial work characteristics and health were collected at the same occasion. Consequently, the relationships found between these study variables may result from data being collected through self-ratings at one occasion⁴⁸⁾. This means that further studies using a longitudinal design and perhaps objective health measures are needed.

In conclusion, the present study showed no consistent effect of childhood GMA on self-reported health. But, in line with previous findings, a strenuous work situation in terms of high demands was related to poorer health. Although further longitudinal research, including larger samples and better measures, is needed, the present results underscore the importance of psychosocial work characteristics in adulthood for midlife health, particularly in healthy working women and men.

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