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## ORIGINAL ARTICLE

# Evaluation of ethical standards in a large sample of Italian white-collar workers: A pilot study

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## KEYWORDS

Corporate Ethical  
 Virtues  
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 Ethical climate ;  
 Occupational health

## Summary

**Background.** – In recent years many tools have been developed for the objective assessment of the impact of ethics in the occupational world; in the Italian context, many different methods have been used to assess ethical values in the occupational context, which presents difficulties for the occupational physician in the interpretation of the results. To standardize the evaluation of ethical standards in the workplace, the short version of a questionnaire based on the Corporate Ethical Virtues Model, which was recently validated in Italian, was used to evaluate ethical climate in a population of office workers.

**Methodology.** – The questionnaire was administered to a large population of Italian office workers. Descriptive statistical analysis, as well as a logistic regression model, were performed to evaluate variables acting as predictors of ethical standards. *P*-values < 0.05 were considered statistically significant.

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*Results/discussion.* — In all, 3706 workers were included in the study; 1710 were males (46.14%). The total score obtained on the questionnaire by the workers participating in the study ranged from 31 to 96 points, with a mean of 72.16 (SD ± 11.01) points (higher values indicate better ethical standards). Job role and length of service were highlighted as statistically significant ( $P < 0.01$ ) predictors of ethical standards.

*Conclusion/perspectives.* — Role and length of service are predictors of ethical standards. The questionnaire may be used to evaluate ethical climate in the workplace, allowing the harmonization of the evaluation of ethical standards performed by the occupational physician. Further studies are needed to evaluate the impact of ethical climate on workers' well-being.

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## Definitions

**Occupational medicine:** occupational medicine is a medical specialty concerned with the maintenance of health and the prevention, diagnosis, and treatment of diseases, injuries, and other conditions related to the workplace. It focuses on ensuring that working environments are safe and conducive to the well-being of employees. Practitioners in this fieldwork to assess workplace hazards, implement safety protocols, provide health education, and manage work-related health issues to promote a healthy and productive workforce.

**Occupational physician:** an occupational physician is a medical doctor who specializes in occupational medicine.

**Role:** role refers to the set of responsibilities, duties, tasks, and expectations associated with a specific position within an organization or group.

## Introduction

An individual's behavior and their interactions in the socio-occupational sphere are influenced by personal values and moral principles, which is understood as the ability to discern what is right from what is wrong; these rules and principles represent the code of ethics [1]. There are several dimensions used to describe the concept of ethics; first among them is the moral dimension, which is comprised of rules based on moral principles applied in various spheres. In the context of occupational medicine, a specific dimension has been developed concerning ethics in the workplace: organizational ethics not only influence the well-being of workers, but also increase work performance and efficiency. Business ethics is based on guidelines for acting in a morally acceptable manner in management decisions related to business operations and business relations. In general, being ethical in the business world means applying standards of integrity and fairness in dealing with employees and customers [2].

Considering the influence that ethics has in the occupational world, it's essential for the occupational physician to carry out an analysis of the organizational climate and how it can influence the worker's mood and psychological

well-being, in addition to an assessment of the individual worker's mental and physical health. The ethical climate is an important aspect of the organizational climate and, consequently it has a significant influence on the psychophysiological well-being of workers, as well as their work efficiency and performance. Ethical climate is usually defined as those aspects that determine what constitutes ethical conduct [3].

The role of ethical climate in the workplace and its influence on the organizational climate has been studied since the 1970s. Various aspects of the organizational environment have been analyzed, including the climates for safety, for implementation, and for service, and the climate for diversity and inclusion [4–7].

Applebaum et al. underlined how in the last ten years, there has been an increase of interest in unethical behavior exhibited by firms, which has brought the public's attention to the inherent dangers of unethical business practices [8]. Denison and Mishra, created a model of organizational culture and effectiveness based on four traits: involvement, consistency, adaptability, and mission. Each of the four traits is a significant predictor of effectiveness criteria such as quality, employee satisfaction, and overall performance [9].

Other studies have focused on the relationship between organizational culture and work performance, as their main assessment outcome, and have not considered the employee's psychological health and well-being. They have also not addressed the role organizational culture plays in establishing better psychological management of the relationships among colleagues, which can lead to more effective organizational processes. Organizational productivity and culture are contributing factors towards improving performance [10]. Majstorović et al. pointed out that work-related stress can also originate from dissonance between workplace ethics and personal ethics and this can compromise workers' mental health [11]. The correlation of workplace ethical climate with burnout has also been highlighted [12].

The Ethical Climate Questionnaire, based on the Corporate Ethical Virtues (CEV) model is a multi-dimensional questionnaire to measure ethical organizational culture and includes 58 items, which are subdivided into seven virtues. These virtues should be embedded in the culture of

organizations and they represent the ethical quality of the organizational culture. Corporate ethical virtues are the organizational conditions for ethical conduct; they reflect the capacity of an organization to stimulate the ethical conduct of employees. The virtues investigated through various items are clarity, congruency, feasibility, supportability, transparency, discussability and sanctionability.

In recent years many tools for the objective assessment of ethical impact in the occupational world have been developed, due to the increasing need to understand how workplace ethics affect workers' mental well-being and performance. Among these tools, the Ethical Climate Questionnaire, was developed and validated by Kaptein in 2008. The Ethical Climate Questionnaire is the first empirically validated multi-dimensional tool to assess ethical organizational culture [13]. A short English version of Kaptein's Questionnaire was developed and validated by Huhtala et al. in 2021 [14].

In the Italian context, a literature and grey literature review has highlighted that many different methods are used to assess ethical values in the occupational context, which creates a challenge and barrier for the occupational physician in reconciling the principles of medical ethics with the economic interests of the work environment [15]. Similarly, many different tools and questionnaires have been validated in Italian workers to assess psychological well-being [16,17], as well as the effect of workers' mental health on work relationships [18].

Following the stimulus received from the 2013 National Anti-Corruption Plan, which established the need to assess employees' perceptions of corruption and their ethical values and integrity, interviews were carried out with the aim to increase the ability to detect cases of corruption. In this context, the Ethical Climate Questionnaire was translated and adapted to the Italian context by Tannorella et al., and the Italian short version of the questionnaire, comprised of 24 questions, was validated and is publicly available in the free full-text manuscript [19].

The aim of this study was to evaluate ethical climate in a large sample of office workers in Italian public administration. To achieve this, the short Italian version of the Ethical Climate Questionnaire was used. This tool, already validated in a population of Italian workers, allows researchers to assess ethical climate and could represent a way to standardize the evaluation of ethical climate at a national level.

## Methods

### Sample

This research has been carried out on a large sample of workers in an Italian public administration company comprised mostly of office workers, with tasks pertaining to economics, budgetary administration and tax policies, structured into several departments. Most of the offices are in Rome, Italy, but a few offices were located in other cities all across the Italy. Most of the employees were back-office workers, although some employees were assigned front-office duties. The survey that is the topic of the study is only a part of a

survey carried out for internal needs of the administration to assess some aspects of the organization.

At the time of the survey, the company had 10,422 employees. All employees were invited to participate in the study by completing an anonymous online questionnaire. To ensure participants' anonymity, no email or personal data were required. The link to the questionnaire was sent to employees via companywide email by the occupational physician after receiving internal approval from the company. Participation was voluntary and open to all company employees.

Data collection and administrative procedures were carried out anonymously, after internal approval by administration of the questionnaire and its content. Participation was completely voluntary, no incentives were offered to participate, and the data collected strictly adheres to topics that fall within the professional sphere of the participants. The collection of data was carried out in accordance with the principles expressed in the Declaration of Helsinki and national legislation on health and safety at work.

The study data were collected, stored and handled according to Italian data protection laws. Personal data was rendered anonymous and has been analyzed aggregately (as a whole – single sample).

### Questionnaire

The administered questionnaire was comprised of three parts, for a total of 32 questions (including an initial question assessing informed consent, 7 questions gathering sociodemographic data, and 24 questions from the short Italian version of the CEV questionnaire validated in a previous study [19]).

Prior to initiating the questionnaire, participants were provided with an information letter containing comprehensive details regarding the study's objectives, procedures, and participant rights, including the right to withdraw from the study at any time without penalty. This document also outlined the methods for data processing and protection.

Participants were required to thoroughly review the information letter and provide informed consent by signing the document. This consent confirmed their understanding of the study's purpose, voluntary participation, and acceptance of the data processing terms. The first item of the questionnaire served to verify that informed consent had been obtained, thereby ensuring that only those who had consented could proceed with the questionnaire.

The second section of the questionnaire had 7 questions, focusing on sociodemographic data: age, gender, family composition, education, occupational role within the company (employee, middle manager, executive), length of service, and type of contract.

In the third section, the validated questionnaire by Tannorella et al. [19], was administered to the workers, investigating the ethical climate in the work environment and its perception among participants. This section included 24 questions, divided into 8 dimensions. Each dimension was investigated through three questions. The dimensions investigated: clarity (D1), feasibility (D2), supportability (D3), transparency (D4), discussability (D5), sanctionability (D6), congruency of supervisors (D7), and congruency of management (D8). For each question, four Likert-type Scale answers

were available, with the first question being the least ethical one and the fourth being the most ethical answer. Therefore, a higher score meant that the worker had chosen more ethical answers, whilst a lower score on the questionnaire meant the answers were less adherent to ethical standards.

The questionnaire utilized a Likert-type scale with four response options for each question, where the first option represented the least ethical choice and the fourth option represented the most ethical choice. Consequently, a higher total score indicated that the participant selected responses more aligned with ethical standards, while a lower score reflected choices that were less consistent with ethical principles.

## Statistical analysis

A descriptive statistical analysis was carried out to determine the sociodemographic characteristics of the participants, and to study the characteristics of all variables, which were presented through theoretical score ranges, arithmetic means, standard deviations.

The Wilcoxon rank-sum (Mann-Whitney) test and the Kruskal-Wallis equality of populations rank test were performed to check for possible correlations between sociodemographic characteristics (including occupational information) of the participants and the score obtained in the ethical climate questionnaire. *P*-values were considered significant if they were < 0.05. The internal consistency of the questionnaire was evaluated using the Cronbach's  $\alpha$ .

In a second stage using the questionnaire score as a dependent variable, and the sociodemographic data and occupational information as predictors, a logistic regression model was developed. Coefficient of regression, standard errors, *P*-value, and beta coefficient were calculated.

The STATA16 software was used for all statistical analysis.

## Results

At the time of the survey, the company had 10,422 employees; 5497 office workers participated in the survey (response rate 56%). However, data from 1791 participants had to be excluded due to missing information for at least one of the questionnaire items. Thus, 3706 workers were included.

Among the participants, 1710 were males (46.14%) and 1996 were females (53.86%). Regarding occupational role within the company, 170 (4.59%) participants were executives, 1673 (45.14%) were middle managers, and 1863 (50.27%) were employees. Based on age, 1846 (49.81%) of the participants were between 55 and 64 years of age, 1414 (38.15%) were between 45 and 54 years, 269 (7.26%) were between 35 and 44 years, while 95 (2.56%) were older than 65 years of age, and 82 (2.22%) were younger than 35 years of age. Concerning length of service, 1578 (42.58%) participants were employed for longer than 30 years, 1418 (38.26%) were employed between 21 and 30 years, and 379 (10.23%) between 11 and 20 years, while only 331 (8.93%) were employed at the company for less than 11 years (Table 1).

To evaluate the internal consistency of the questionnaire, Cronbach's  $\alpha$  was calculated; the questionnaire used had good internal consistency with  $\alpha = 0.92$ .

**Table 1** Sociodemographic characteristics of study population.

	Participants (3706)
Gender	
Male	1710 (46.1%)
Female	1996 (53.9%)
Age	
> 65 years old	95 (2.6%)
55–64 years old	1846 (49.8%)
45–54 years old	1414 (38.1%)
35–44 years old	269 (7.3%)
< 35 years old	82 (2.2%)
Role within the company	
Executive	170 (4.6%)
Middle manager	1673 (45.1%)
Employee	1863 (50.3%)
Length of service	
> 30 years	1578 (42.6%)
21–30 years	1418 (38.3%)
11–20 years	379 (10.2%)
0–10 years	331 (8.9%)

The total score obtained on the questionnaire by the workers participating in the study ranged from 31 to 96 points, with a mean of 72.16 (SD  $\pm$  11.01) points.

The scores for each question, including minimum and maximum scores, range, mean (with SD), and quartiles, are summarized in Table 2.

Scores for each dimension (each dimension is comprised of three items as reported in the method section), including minimum and maximum scores, range, mean (with SD), and quartiles are summarized in Table 3. The dimension with the highest score overall was Clarity, with an average score of 9.95 (SD  $\pm$  1.66), and the second dimension, Feasibility, had the second highest score with an average score of 9.85 (SD  $\pm$  1.69).

A logistic regression model was developed, using the questionnaire score as a dependent variable, and the sociodemographic data and occupational information as predictors (Table 4) and *P*-values were considered significant if they were < 0.05.

Role within the company and length of service were highlighted as statistically significant predictors for the score obtained in the part of the questionnaire evaluating ethical standards in the participating workers. Other predictors used in the logistic regression (age, gender, family status, education level, type of employment contract) were not statistically significant.

## Discussion

The short version of the Ethical Climate Questionnaire, validated in Italian by Tannorella et al. [19], was administered to a sample of Italian office workers; a total of 3706 valid responses were obtained. The total score obtained on the questionnaire by the workers participating in the study ranged from 31 to 96 points, with a mean of 72.16 (SD  $\pm$  11.01) points. Occupational role within the company and length of

**Table 2** Results concerning total score and single question.

	Total score	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Range	65	3	3	3	3	3	3	3	3	3	3	3	3
Min	31	1	1	1	1	1	1	1	1	1	1	1	1
Max	96	4	4	4	4	4	4	4	4	4	4	4	4
Mean	72.16	3.35	3.36	3.24	3.37	3.32	3.16	3.23	3.25	3.28	3.08	2.84	2.69
SD	11.01	0.58	0.59	0.70	0.66	0.68	0.68	0.77	0.76	0.74	0.80	0.79	0.88
p25	65	3	3	3	3	3	3	3	3	3	3	2	2
p50	72	3	3	3	3	3	3	3	3	3	3	3	3
p75	80	4	4	4	4	4	4	4	4	4	4	3	3
	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	
Range	3	3	3	3	3	3	3	3	3	3	3	3	
Min	1	1	1	1	1	1	1	1	1	1	1	1	
Max	4	4	4	4	4	4	4	4	4	4	4	4	
Mean	2.87	3.13	2.98	2.28	2.20	2.54	3.09	3.16	3.20	2.78	2.80	2.92	
SD	0.91	0.85	0.85	0.98	1.00	1.02	0.78	0.69	0.70	0.71	0.71	0.71	
p25	2	3	2	1	1	2	3	3	3	2	2	3	
p50	3	3	3	2	2	3	3	3	3	3	3	3	
p75	4	4	4	3	3	3	4	4	4	3	3	3	

**Table 3** Results concerning total score and single dimension.

	Total score	D1	D2	D3	D4	D5	D6	D7	D8
Range	65	9	9	9	9	9	9	9	9
Min	31	3	3	3	3	3	3	3	3
Max	96	12	12	12	12	12	12	12	12
Mean	72.16	9.95	9.85	9.76	8.61	8.98	7.03	9.26	8.51
SD	11.01	1.66	1.69	1.99	2.04	2.33	2.56	2.03	1.95
p25	65	9	9	9	7	8	5	9	7
p50	72	9	9	10	9	9	7	9	9
p75	80	12	12	12	10	11	9	12	9

service were highlighted as statistically significant predictors of higher ethical standards.

The dimensions of the questionnaire that had the highest impact on ethical climate were clarity and feasibility.

The clarity dimension investigates whether and to what extent the worker knows and understands the codes and laws concerning workplace behavior, usage of workplace tools, and possible conflicts of interest present in the workplace. The highest score being demonstrated in the Clarity dimension highlights that a proper knowledge of how to behave ethically, how to use tools, and how to properly declare and act regarding conflicts of interest has an impact on workplace ethics; workers who know and understand these codes and laws behave more ethically. This further highlights the importance of comprehensive employee training concerning these themes. The occupational physician could play a fundamental role in improving workplace ethical behavior, by providing employees with the most correct and up-to-date information regarding applicable laws and codes, including those internal to the company or specific for the work sector of the firm, and training employees on ethical workplace behavior.

The other dimension, which was demonstrated to have a significant influence on ethical behavior, was feasibility.

Feasibility of ethical behavior was investigated through questions assessing whether employees have been asked to act in opposition to their personal ethical beliefs while performing a job task, whether they perceive they need to act unethically to be successful, and whether they are provided with sufficient time to perform their work tasks responsibly. This dimension investigates how workplace time and task management affects ethical workplace behavior; employees who feel as though they suffer from a shortage of time and resources tend to consequently feel that they are unable to feasibly perform their work in an ethical manner. Overworking employees and not providing them with sufficient time to complete their job tasks may therefore induce workers to act unethically. Furthermore, time management and work-life balance have been highlighted as important contributing factors towards work engagement [20], influencing length of service of employees [21]. The occupational physician could have an essential role in preventing the practice of unsustainable work hours, unjust overtime, etc., and ensuring that employees are given appropriate time and resources to perform their job tasks ethically.

It would be advisable to consider this questionnaire, particularly the relevant dimensions which occupational physicians can act upon, in order to evaluate the risk of

**Table 4** Total questionnaire score for variable category.

	<i>n</i>	p25	p50	iqr	Rank-sum	<i>P</i> -value
Gender						
Female	1996	65.00	72.00	14.00	3,682,021.50	0.58
Male	1710	65.00	73.00	15.00	3,187,049.50	
Age						
< 35	82	63.00	74.00	18.00	155,665.50	0.87
35–44	269	66.00	73.00	13.00	510,910.00	
45–54	1414	65.00	72.00	15.00	2.63e + 06	
55–64	1846	65.00	72.00	15.00	3.39e + 06	
> 65	95	65.00	72.00	15.00	178,719.50	
Role within the company						
Employee	1863	64.00	72.00	15.00	3.37e + 06	< 0.01*
Middle manager	1673	65.00	73.00	15.00	3.11e + 06	
Executive	170	70.00	77.50	14.00	393,371.50	
Family						
Other	1078	65.00	73.00	16.00	2,005,225.50	0.80
Cohabitant/married	2628	65.00	72.00	15.00	4,863,845.50	
Education degree <sup>a</sup>						
Middle school	301	65.00	71.00	14.00	540,056.00	0.12
High school	2127	65.00	72.00	14.00	3.90e + 06	
University degree	1278	65.00	73.00	16.00	2.43e + 06	
Length of service						
0–10	331	67.00	75.00	15.00	685,900.50	< 0.01*
11–20	379	65.00	74.00	15.00	716,422.00	
21–30	1418	64.00	72.00	16.00	2.59e + 06	
> 31	1578	65.00	72.00	14.00	2.88e + 06	
Employment contract						
Part time	241	65.00	72.00	13.00	434,152.50	0.43
Full time	3465	65.00	72.00	15.00	6,434,918.50	

<sup>a</sup> Middle school: education degree generally obtained at age 13–14; high school: educational degree generally obtained at age 18–19.

\* Statistically significant.

unethical behavior in the workplace and provide appropriate information and training for workers, and implement necessary preventive measures to ensure workers do not feel pressured to act unethically.

Concerning sociodemographic factors acting as predictors of unethical behavior, Appelbaum et al. [8] have highlighted, in a 2005 study, that gender, age, tenure and education levels influence ethical standards in workers. According to this study, older female workers, workers with higher education degrees, and workers that have been employed for a longer period of time at the same company, are more likely to uphold higher ethical standards. While age and gender were not shown to be significant predictors of ethical business behavior in our study, occupational role within the company was also highlighted as a positive predictor in our research. Consistent with our results, role and tenure, along with educational level, represent important predictors of ethical behavior in the workplace.

Concerning length of service specifically, Rubel et al. [22] have highlighted how ethical climate is negatively related to turnover intention, indicating that employees with higher moral standards tend to stay with the same company for longer.

This study has some strengths and limitations. The sample is large and well distributed based on gender; the

sample was purposely comprised of office workers, since the validation of the questionnaire was also performed on administrative workers. However, this study also has a few limitations: the study only considered office workers and cut-off levels were not evaluated; further studies will be necessary to identify the appropriate cut-off points to establish the values within which operators can work in conditions of well-being and to evaluate the consistency of this tool on other worker populations. Furthermore, more information is needed to determine the precise score range that would be desirable. To our knowledge, this is the first study to use this tool to evaluate ethical climate on a large sample of workers, therefore further studies are needed to determine appropriate score ranges for a more detailed evaluation.

## Conclusion

The mean total score was 72.16 (SD ± 11.01) points. Higher occupational role (executives) and shorter length of service (less than 10 years) were highlighted as statistically significant ( $P < 0.01$ ) predictors of higher ethical standards.

The short Italian version of the CEV questionnaire could be a useful tool to harmonize the evaluation of ethical

standards in the workplace. It has been demonstrated in previous scientific literature that unethical conditions in the workplace have a negative effect on the psychological well-being of workers [14,23,24]. Therefore, the evaluation of workplace ethics could be a useful tool for occupational physicians during medical evaluations as it would aid in assessing the workers' overall well-being. Considering that psychological well-being is a fundamental aspect of medical evaluation and the increased focus on this critical component of health since the Covid-19 pandemic, it is important to recognize ethical climate as a contributing factor towards overall psychological well-being. Increasingly, the assessment of workplace ethical climate by the occupational physician is becoming a key component of routine medical visits. For this reason, a validated tool that has shown good reliability, such as the one used in this study, could be an essential tool for the evaluations performed by occupational physicians during medical assessments.

Further studies are needed to evaluate the impact of ethical climate on workers' well-being and on the psychological impact of the workplace's ethical climate.

## Human and animal rights

The authors declare that the work described has been carried out in accordance with the Declaration of Helsinki of the World Medical Association revised in 2013 for experiments involving humans as well as in accordance with the EU Directive 2010/63/EU for animal experiments.

## Informed consent and patient details

The authors declare that this report does not contain any personal information that could lead to the identification of the patient(s) and/or volunteers.

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## Authors' contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

## Disclosure of interest

The authors declare that they have no competing interest.

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