

The Pfister Test in Psychological Assessment for Firearm Handling

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ABSTRACT – As there are few Pfister Test studies in the context of assessment for handling a firearm, the objective was to describe the personality characteristics of security guards and candidates for handling firearms (n= 112) when compared with people from the general population (n= 288). The data collection instruments were a questionnaire to collect sociodemographic information and the Pfister Test. For data analysis, nonparametric tests and multiple linear regression analysis were used. Candidates for handling weapons showed characteristics of more rigidity, anxiety and immaturity with a predisposition to be more oppositional and ambivalent in relation to their feelings. There is also a need for further studies with more comprehensive and diversified samples.

KEYWORDS: psychological assessment, projective personality measures, firearms

Teste de Pfister na Avaliação Psicológica para Manuseio de Arma de Fogo

RESUMO – Como há poucos estudos do Teste de Pfister no contexto de avaliação para o manuseio de arma, o objetivo foi descrever as características de personalidade de vigilantes e candidatos para manusear armas de fogo (n= 112) quando comparados com pessoas da população em geral (n= 288). Os instrumentos de coleta de dados foram um questionário para recolher informações sociodemográficas e o Teste de Pfister. Para a análise de dados utilizou-se testes não paramétricos e análise de regressão linear múltipla. Os candidatos ao manuseio de arma apresentaram características de mais rigidez, ansiedade e imaturidade com predisposição para serem mais oposicionistas e ambivalentes em relação aos seus sentimentos. Nota-se ainda a necessidade de mais estudos com amostras mais abrangentes e diversificadas.

PALAVRAS-CHAVE: avaliação psicológica, medidas projetivas da personalidade, armas de fogo

Ease and immediacy of firearm access have been associated with increased risk of suicide (Dempsey et al., 2019), intimate partner violence against women (Pinto et al., 2021), child and adolescent victims (Ribeiro et al., 2021), the main means of perpetrating physical violence in a hospital (Fiorini & Boeckel, 2021), fatal victims of the mixed race male, aged between 20-59 years, (Silveira Pinto et al., 2021), male school victims of elementary school

(Terribele & Munhoz, 2021), just to name a few examples. In view of this situation, attempts have been made to develop regulations on the possession and carrying of weapons that provide for restrictions on the use, registration, ownership and possession of weapons.

In Brazil there are two regulations regarding the handling of firearms, when referring to the interested citizen and the role of security guard, which are the Decree No. 10.629/21 and

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the Normative Instruction of the Federal Police Department (DPF) N.º 78/2014. The Decree N.º 10.629/21 provides for the registration and acquisition of weapons and ammunition by hunters, collectors and shooters. It also determines the need for proof of psychological aptitude for handling a firearm, which must be attested to in a conclusive report provided by a psychologist with active professional registration at the Regional Council of Psychology (CRP) (Brazil, 2021).

The Normative Instruction of the Federal Police Department – DPF No. 78/2014 (IN 78/14), establishes the procedures for the accreditation and inspection of psychological tests carried out by accredited psychologists responsible for issuing the report that certifies the psychological aptitude factors for handling a firearm and for exercising the profession of security guard. Just as it explains the aptitude criteria and determines the psychological constructs to be evaluated. In Article 5, the battery of psychological assessment instruments to be used in the assessment of required personality characteristics and specific skills is determined, namely, projective testing; expressive test; memory test; diffuse and concentrated attention test and semi-structured interview (Brazil, 2014).

Corroborating with Decree No. 10.629/21 and IN of the DPF, the Federal Council of Psychology (CFP) establishes, through Resolution No. 1, of January 21, 2022, in Art.4º the psychological characteristics to be evaluated in this context of handling firearm, namely: I – cognitive aspects: attentional processes; intellectual level; inhibitory control and planning (executive functions); II – Personality traits: a) aggressiveness; b) anxiety; these cannot be exacerbated or greatly diminished; and indicators of any type of disorder that impairs the subject’s self-control; III- Critical judgment and behavior: actions and reactions appropriate to the problem-situations presented that involve the use of firearms, data obtained through individual interviews, observation and group dynamics. In the case of assessing personality traits, it will be necessary to use three different types of instruments, namely: a) projective; b) expressive and c) psychometric. It is worth remembering that the psychology professional has the technical responsibility to decide on the methods, techniques and psychological instruments to be used in the evaluation process, as long as they are approved by Satepsi.

Thus, psychological assessment for firearm handling is compulsory and the use of a projective test is required in this type of assessment. The compulsory psychological assessment (PA) is a structured technical-scientific process of investigation of psychological phenomena, composed of instruments, techniques and methods with the purpose of providing information about a specific purpose (CFP, 2018). In the case of firearm handling, the assessment is aimed at responding to a specific legal demand.

In turn, the requirement to use a projective personality assessment test is supported because it is often more likely than other types of tests to reveal characteristics that

respondents do not recognize in themselves or are hesitant to admit it when asked about them directly. Due to this indirect methodology, projective tests are less prone to the influences of social desirability, less susceptible to conscious and intentional manipulation or concealment, which favors their use in this context (Weiner & Greene, 2017).

Previous studies sought to establish the most suitable indicators to be observed in assessments for the handling of firearms through projective tests. Pellini (2006) observed, through Rorschach’s Psychodiagnosis, analyzed according to the proposal of Aníbal Silveira, that the ability to control impulsivity (the Impulsivity – IMP and Movement Response – RM indices), to adapt to reality and recognize the consequences of their acts (Index of Adaptation to Reality – RMI), as well as modulating their affective and emotional expressions (Color Response – RC) showed differences between the control group and the other two groups. The results suggested that the evaluated indices can discriminate more violent people, who, for emotional reasons, could be contraindicated for possession of firearms.

Sá Hasbun et al. (2021) outlined some indicators of the Zulliger test to assist in decision making in psychological assessments for firearm handling. According to the authors, the ability to manage their affections, showing more mature and empathic emotional reactions, in which the logical-rational aspects can contain the violent affective discharges or more labile and suggestible reactions would be one of the main aspects to be considered in the evaluation with this test (variable $HR > CF+C$). For the authors, the coerced “type of experience” in the Zulliger would be the most suitable for handling a firearm and not the extra tensive one, which indicates ease of exposing feelings and a propensity to lose emotional control. This type of experience variable indicates how people manage the demands of the environment, whether in a balanced way (coerced), with a predisposition to emotional discharges in the environment in which they live (extra tensive), or with a predisposition to withdraw and isolation from the environment (introversive). Despite these important indicators of the Zulliger test, the authors emphasize that the results of a psychological assessment should be based on the set of techniques used in the process, not just one technique.

The Colored Pyramids Test (TPC) is another projective test, which had its normative studies with adults updated in early 2020 (Villemor-Amaral et al., 2020). The test assesses the affective dynamics and the level of personality structuring of the examinee, as well as allowing the inference of information about cognitive functioning (Villemor-Amaral, 2005). The TPC has been widely used in several contexts, including compulsory psychological assessments, legally required, including that carried out to authorize the handling of firearms.

However, no specific studies were found that addressed the use of TPC with security guards and candidates for handling firearms. Given the absence of studies involving the use of the

TPC with the public of compulsory normative psychological assessments, this research aimed to investigate the personality characteristics of a group of vigilantes and candidates to

handle firearms through the comparison of the performance of security guards and candidates for firearm handling in the interior of Bahia with the TPC's normative sample.

METHOD

Participants

In this study, 400 TPC protocols from two databases were considered. The first corresponds to the 288 protocols collected in the second half of 2019 and used to compose the normative sample of the TPC submitted to Satepsi in January 2020 (normative group). This group comes from research that considered samples from Ceará, Goiânia, Rio Grande do Sul and São Paulo. The participants in this group were aged between 22 and 41 years (Average=33, SD=12.4), 54.9% were female, 8.5% had Elementary School, 56.3% had High School and 35.2% had higher education.

The second database was composed of 112 protocols of security guards and candidates for handling firearms in the interior of Bahia (compulsory group) and were collected in the period between 2016 and 2018. In this group, age ranged between 31 and 45 years (Mean=39 years, SD=11.6), with 75.9% being men and 23.4% having elementary school, 39.7% having high school and 37.0% had higher education. Considering all participants, the average age of these 400 participants was 34.7 years (SD = 12.5), 53.8% were male, 51.4% were in high school and 35.7% in Higher Education. It was observed that the groups were different in terms of age ($p < 0.001$), sex ($p < 0.001$) and education ($p < 0.001$).

It was found that the compulsory group had a higher median age, a higher proportion of men and a higher proportion of individuals with low schooling (Elementary School) when compared to the normative group. It is noteworthy that in normative studies with the CPT, no differences were found that would justify specific tables or differentiation according to sex, age or education in the group of adults. Despite this, this study considered to manage this issue of differences between groups, the multiple linear regression analysis was used to verify the association between the group (normative versus compulsory) when controlling for age, sex and education.

Instruments and Procedures

Information regarding age, gender, education and health status of the participants were extracted from the databases, as well as the TPC. To compare groups (normative versus compulsory) according to the TPC indicators, the indicators considered chromatic formulas, execution process, placement mode, formal aspects, percentage of use of colors and chromatic syndromes.

For the data analysis, the Kolmogorov-Smirnov (K-S) normality test was first performed with Lilliefors correction (data not shown in tables) for all quantitative variables and, due to the lack of normality of all test variables, as well as for age, non-parametric tests were used in the analyses. To verify differences in sociodemographic characteristics between groups (normative versus compulsory), Pearson's chi-square tests were used to compare the proportions of the categories of sex and education. For education, Pearson's chi-squared post hoc test was used for multiple comparisons (pairwise comparisons) in order to analyze the specific differences between education categories. Comparison of age between groups was performed using the Mann-Whitney test for independent samples.

The chromatic formulas and the execution process were considered as qualitative and presented in absolute (n) and relative (%) frequency. To compare these variables between the groups, Pearson's chi-square test or the Likelihood Ratio test was performed, in case the chi-square test did not meet its assumptions, which is the minimum expected frequency of 5 in all cells in the contingency table. In case of statistical significance, Pearson's chi-squared post hoc test was performed for multiple comparisons (pairwise comparisons) to analyze specific differences between categories. The size of the effect for these variables was estimated by Cramer's V, being classified as small ($V = 0.10$ to 0.20), medium ($V = 0.21$ to 0.60) and large ($V = 0.61$ to 1.0), using as reference the values suggested by Rea and Parker (1992) (Table 1). Similarly, this strategy was used to compare placement mode and formal aspects (Table 2). However, for these variables, the frequencies of the three pyramids of the tests were considered, in their sum, resulting in a sample n of 1,200 observations (864 from the normative group and 336 from the compulsory group).

In the descriptive analysis of colors and syndromes, raw values and percentage of colors were considered, presented as average, standard deviation (SD), median, 25th percentile (P25), 75th percentile (P75), according to the groups. To verify significant differences between the medians of colors and chromatic syndromes, the Mann-Whitney tests were performed for independent samples (Table 3). The size of the effect of these variables was calculated using Cohen's d, classified as small ($d = 0.20$ to 0.49), medium ($d = 0.50$ to 0.79) and large ($d \geq 0.80$) based on the reference values suggested by Cohen (1988).

Table 1
Comparative analysis of chromatic formulas and execution process by normative and compulsory group

Variables	Categories	Group						χ^2*	p	V for Cramer
		Total (n = 400)		Normative (n = 288)		Compulsory (n = 112)				
		n	%	n	%	N	%			
Combinations	Wide and stable	83	20.8	57	19.8	26	23.2	18.183	0.020	0.213
	Wide and flexible	36	9.0	29	10.1	7	6.3			
	Wide and unstable	46	11.5	38	13.2	8	7.1			
	Moderate and stable	36	9.0	22	7.6	14	12.5			
	Moderate and flexible	46	11.5	33	11.5	13	11.6			
	Moderate and unstable	80	20.0	61	21.2	19	17.0			
	Restricted and stable***	23	5.8	10	3.5	13	11.6			
	Restricted and flexible	20	5.0	17	3.5	13	11.6			
	Restricted and unstable	30	7.5	21	7.3	9	8.0			

Note. *Pearson's chi-square or likelihood ratio test; **Statistical difference between stable and flexible ($p = 0.020$) and unstable ($p = 0.101$); ***Statistical difference between restricted and stable with wide and stable ($p = 0.048$); wide and flexible ($p = 0.07$); wide and unstable ($p = 0.002$); moderate and flexible ($p = 0.043$); moderate and unstable ($p = 0.006$) and restricted and flexible ($p = 0.012$); ****Statistical difference between disorderly and methodical ($p = 0.001$).

Table 2
Comparative analysis of formal aspects by normative and compulsory group

Variables	Categories	Group						χ^2*	p	V for Cramer
		Total (n = 1.200)		Normative (n = 864)		Compulsory (n = 336)				
		n	%	n	%	n	%			
Formation	Monotone Layers	86	7.2	26	3.0	60	17.6	80.164	<0.001	0.258

Note. *Pearson's Chi-Square or Likelihood Ratio test.

Finally, multiple linear regression analysis was used to verify the association between the group (normative *versus* compulsory) when controlling for age, sex and education. The percentage of colors and chromatic syndromes were considered as dependent variables. The independent variables considered were age, sex, education and the group for adjusting the model. All models were validated for linearity, homoscedasticity, normality of the regression residuals and absence of collinearity. The analysis of linearity, homoscedasticity and normality of the regression residues were evaluated by graphical analysis. The collinearity of the regression model was tested by the Variance Inflation Factor (FIV), with an absence of collinearity being considered

a value of FIV < 10.0. All models showed linearity, homoscedasticity, normality of residues and absence of multicollinearity, with FIV ranging from 1.07 to 3.01. The F test was used to verify the global significance of the models. The results of the regression models were presented as regression coefficient (β) and 95% confidence interval (IC 95%), standardized regression coefficient (β_p) and statistical significance (p value). The statistical significance of the models was established by the t test (Tables 4 and 5). Data were analyzed using the Statistical Package for Social Sciences software, version 27.0 (SPSS, version 27.0) and values of $p < 0.05$ were considered statistically significant in all analyses.

RESULTS

Only statistically significant data with effect sizes between medium and large were presented. In Table 1, it was observed that the compulsory group had a higher proportion of wide and stable combination (23.2%; $p = 0.048$), wide and flexible (6.3%; $p = 0.007$), wide and unstable ($p = 7.1\%$; $p = 0.002$),

moderate and flexible (11.6%; $p = 0.043$), moderate and unstable (17.0%; $p = 0.006$) and restricted and flexible (11.6%; $p = 0.012$), with average effect size ($V = 0.213$), when the comparison was with the restricted and stable combination (3.5%).

Table 3
Comparative analysis of the colors and syndrome's median by normative and compulsory group

Variables	Gender	n	M	SD	Med	P25	P75	U*	p	d
Blue%	Total	400	18.80	10.93	17.78	13.33	24.44			
	Normative	288	19.76	11.18	17.78	13.33	24.44	13,189.50	0.005	0.286
	Compulsory	112	16.33	9.86	15.56	11.11	20.00			
Red%	Total	400	17.18	10.58	15.56	11.11	22.22			
	Normative	288	18.16	10.61	17.78	11.11	24.44	12,778.00	0.001	0.327
	Compulsory	112	14.68	10.14	14.44	8.89	20.00			
Green%	Total	400	17.26	11.09	15.56	11.11	22.22			
	Normative	288	16.06	11.39	15.56	8.89	21.67	20,600.50	<0.001	0.441
	Compulsory	112	20.36	9.66	20.00	15.56	26.67			
Purple%	Total	400	10.16	8.90	8.89	2.22	15.56			
	Normative	288	11.50	9.12	11.11	4.44	15.56	10,893.00	<0.001	0.521
	Compulsory	112	6.69	7.27	4.44	0.00	11.11			
Yellow%	Total	400	10.76	7.98	11.11	4.44	15.56			
	Normative	288	1.59	2.50	1.00	0.00	2.00	20,040.00	<0.001	0.384
	Compulsory	112	13.39	8.96	11.11	7.22	17.78			
White%	Total	400	7.60	8.41	4.44	2.22	11.11			
	Normative	288	6.34	6.77	4.44	2.22	8.89	19,644.00	0.001	0.344
	Compulsory	112	10.83	11.00	6.67	2.22	15.56			
Cold Syndrome%	Total	400	46.22	15.04	46.67	37.78	53.33			
	Normative	288	47.32	15.40	46.67	40.00	53.33	13,479.50	0.011	0.256
	Compulsory	112	43.37	13.71	44.44	35.56	51.11			

Note. d = Cohen's d; SD = Standard Deviation. M = Average; Med = Median; P25 = 25th percentile; P75 = 75th percentile; *Mann-Whitney test for independent samples.

This suggests that the performance of the compulsory group on the test was more typical of people with wide openness to experiences and with a tendency to be more emotionally unstable, immature and with a lower level of intellectual development (wide and stable, wide and flexible, wide and unstable combinations, moderate and unstable). It is noteworthy that the normative group would be less likely to act in a stereotyped way (restricted and stable) than was observed in the compulsory group.

Table 2 shows the comparative analysis of the formal aspects by group. For this variable, the frequencies of the three pyramids of the tests were also considered, totaling 1,200 observations (864 from the normative group and 336 from the compulsory group). Of the various possible formal aspects, only the monotone layer formation was significantly different between the groups, with an average effect size. These data suggest that the compulsory group demonstrates control over their affections and emotions, but tends to perform this control through strong restriction, inhibition or avoidance of emotionally very stimulating situations (17.6% of formation in a monotone layer). In turn, the normative group is more concerned with the search for balance than the compulsory group, and they were more remiss in performing the task and in an attempt to sharply repress internal contents (thought and feelings), which may indicate an attempt to show themselves

differently of what it is (2.1% of unbalanced carpet and 3.2% of mantle structure). Importantly, formation in a monotone layer was considered rare in studies that aimed to establish normative data for Pfister (Villemor-Amaral, 2005).

Table 3 compares the distribution of colors and syndromes according to groups. There was a higher median of the following colors, in percentage, in the compulsory group when compared to the normative group: Green ($p < 0.001$; $d = 0.441$), Yellow ($p < 0.001$; $d = 0.381$) and White ($p = 0.001$; $d = 0.344$). On the other hand, a lower percentage of the following colors was observed in the compulsory group when compared to the normative one: Blue ($p = 0.005$; $d = 0.286$), Red ($p = 0.001$; $d = 0.327$) and Purple ($p < 0.001$; $d = 0.521$). Regarding syndromes, there was a higher median percentage of cold syndrome ($p = 0.011$; $d = 0.256$) in the normative group than in the compulsory group.

These test performances indicate that the compulsory group was more dynamic and predisposed to stimulation overload, to fragility and precarious stability, and to less spontaneous and superficial affective manifestations concomitant with low tolerance to frustration with possible instability and irritability due to external demands. These data, associated with a decrease in Purple%, may reveal impulse denial and anxiety due to difficulty in supporting these states (Villemor-Amaral, 2005).

Table 4
Multiple linear regression analysis of the association between group and colors in percentage, when controlling for age, gender, and education

Variables	β	IC95%	β_p	EP	p
Blue%					
Age	-0.138	-0.230; -0.046	-0.154	0.047	0.003
Gender	0.497	-1.780; 2.773	0.022	1.158	0.668
Education	2.569	0.912; 4.226	0.153	0.841	0.001
Compulsory group	-2.388	-4.954; 0.178	-0.098	1.305	0.068
intercept	20.181				
$F(p): 7.146 (p<0.001)$					
$R^2 = 0.061$					
Red%					
Age	0.039	-0.053; 0.130	0.045	0.046	0.398
Gender	-0.204	-2.459; 2.051	-0.010	1.147	0.859
Education	0.067	-1.574; 1.709	0.004	0.835	0.936
Compulsory group	-3.603	-6.145; -1.061	-0.153	1.293	0.006
intercept	20.524				
$F(p): 2.192 (p=0.069)$					
$R^2=0.012$					
Green%					
Age	0.150	0.057; 0.244	0.165	0.047	0.002
Gender	0.503	-1.808; 2.814	0.022	1.175	0.669
Education	-0.797	-2.479; 0.885	-0.047	0.856	0.352
Compulsory group	3.009	0.404; 5.614	0.122	1.325	0.024
intercept	9.255				
$F(p): 6.125 (p<0.001)$					
$R^2=0.051$					
Purple%					
Age	-0.135	-0.208; -0.061	-0.184	0.037	<0.001
Gender	-1.176	-2.995; 0.643	-0.065	0.925	0.204
Education	0.957	-0.367; 2.281	0.070	0.673	0.156
Compulsory group	-3.398	-5.448; -1.347	-0.172	1.043	0.001
intercept	18.833				
$F(p): 10.937 (p<0.001)$					
$R^2=0.095$					
Yellow%					
Age	0.072	0.005; 0.139	0.111	0.034	0.035
Gender	-0.719	-2.375; 0.937	-0.045	0.842	0.394
Education	0.449	-0.757; 1.654	0.037	0.613	0.465
Compulsory group	3.470	1.605; 5.337	0.198	0.949	<0.001
intercept	3.823				
$F(p): 0.703 (p<0.001)$					
$R^2=0.047$					
White%					
Age	0.068	-0.003; 0.139	0.098	0.036	0.061
Gender	-0.070	-1.828; 1.688	-0.004	0.894	0.938
Education	-0.288	-1.568; 0.992	-0.022	0.651	0.658
Compulsory group	3.894	1.912; 5.876	0.208	1.008	<0.001
intercept	1.172				
$F(p): 6.503 (p<0.001)$					
$R^2=0.055$					

Note. Reference category: Gender (R = female); Group (R = normative); education (treated as ordinal); β = Regression coefficient; 95%CI = 95% Confidence Interval; β_p = Standardized regression coefficient; EP = Standard error; R2 = Coefficient of determination; F = Test F.

Table 5

Multiple linear regression analysis of the association between group and chromatic syndromes, when controlled for age, gender, and education.

Variable	B	IC95%	β_p	EP	p
Cold Syndrome%					
Age	-0.123	-0.252; 0.006	-0.099	0.065	0.062
Gender	-0.176	-3.366; 3.014	-0.006	1.622	0.914
Education	2.730	0.408; 5.051	0.118	1.181	0.021
Compulsory group	-2.777	-6.372; 0.819	-0.083	1.828	0.130
intercept	48.239				
<i>F</i> (p): 3.880 (p=0.004)					
$R^2=0.029$					

Note. Reference category: Gender (R = female); Group (R = normative); education (treated as ordinal); β = Regression coefficient; 95%CI = 95% Confidence Interval; β_p = Standardized regression coefficient; EP = Standard error; R^2 = Coefficient of determination; F = Test F.

Multiple linear regression analysis was performed to verify the association between the group covariate (normative *versus* compulsory) when controlled for the age, sex and education covariates in relation to the use of colors and chromatic syndromes, both shown in percentage. In other words, we sought to verify whether being in the compulsory or normative group, being older or younger, male or female, or whether the level of education influenced the variation in the use of colors and chromatic syndromes. A first fact to be highlighted is that the gender difference is not associated with, or is not capable of predicting the variation in the use of colors or in chromatic syndromes. It is also worth noting that education, as well as the age of the participants, had a very small influence on the variation of these two variables.

The schooling covariate was positively associated with Blue% ($\beta = 2.569$; $p = 0.001$) and negatively associated with Ma% ($\beta = -2.187$; $p < 0.001$) and Ci% ($\beta = -0.749$; $p = 0.033$). This indicates that as one advances in school levels, there is an increase in the control of emotions, as well as a decrease in agitation and affective constriction. When observing the group covariate, it is possible to observe an increase in the percentage of colors Green% ($\beta = 3.009$; $p = 0.024$) and White% ($\beta = 3.894$; $p < 0.001$) and a decrease in Red% ($\beta = -3.603$; $p = 0.006$) and Purple% ($\beta = -3.398$; $p = 0.001$) for those in the compulsory group in relation to the normative. This suggests that the compulsory group reveals more dynamism and predisposition to overload of stimulation, frailty and precarious stability, avoidance of impulses to and denial of anxiety due to difficulty in supporting these states.

It is noteworthy that in each model in which each percentage of the colors was the response variable, the explanatory power (R^2) of the covariates was relatively low. The variation in age and education explained 6.1% of the Blue% variation. The age variation and the fact of being in one or another group explained 5.1% and 9.5% of the variations in Green% and Purple% respectively. The belonging to one of the groups was able to explain the variation of 1.2% and 5.5% of the variations of Red% and White% respectively. The age variation explained 4.7% of the Yellow% variation.

Therefore, a small part (4.7%) of the increase in Yellow in the compulsory group can be explained by the significantly older age of this group. The decreases in Blue and Purple found in the compulsory group can be explained in 5.1% and 9.5% by the effect of higher age and lower education in this group.

For the multiple linear regression analyzes that had chromatic syndromes as the response variable (Table 5), it was observed that in the model in which the response variable was cold syndrome, there was a positive association between this and schooling ($\beta=2.730$; $p=0.021$). In this model, schooling was able to predict 2.9% of the variation in the percentage of this syndrome, which indicates a low explanatory power. Therefore, the effect of differences in age and education between the groups seems to have interfered very little with the results observed previously. It should also be noted that the results presented here require caution in their interpretation, since the comparison between groups does not provide a secure understanding of the phenomenon: handling or carrying a firearm.

DISCUSSION

This study aimed to investigate the personality characteristics of a group of security guards and candidates to handle firearms by comparing the performance of these participants from the countryside of Bahia (compulsory group) with a normative sample of Pfister (normative group).

In the sociodemographic characterization, particularities involved in the composition of each of the samples were observed. The sample for updating the normative data was collected for the research situation, seeking individual contact with volunteers, while the compulsory group sample was

composed of people who needed to undergo a psychological evaluation to obtain a certain benefit.

The fact that a group was collected in a research situation and another in a compulsory context has consequently some of the sociodemographic differences observed between the groups. The compulsory group was predominantly composed of males and with a mean age higher than the normative group, this finding is supported by the profile of people who are seeking permission to handle a firearm. Most of the people who exercise the function of security guard are men (90%) with complete high school (71%) and aged between 30 and 49 years (69%) (Fenavist, 2019). It is noteworthy that, although this group had a greater number of participants from Elementary School than the normative one, in both groups there was a distribution in which people from High School predominated, followed by Higher Education and, to a lesser extent, people with Elementary Education.

As there were significant differences between the groups in terms of sex, age and education, these variables were adjusted in the regression models to avoid biased estimates. Thus, it was observed that the gender difference was not able to predict the variation in the use of colors or in chromatic syndromes. On the other hand, the age variation explained between 4.5% and 9.5% of the variation of four colors: black, green, yellow, and purple. Together, age and education explained 6.1% of the blue color variability. Thus, the variability of age and educational level seem to have interfered little in the results shown below. It is noteworthy that the comparison by sex, age and schooling were carried out in the studies to update the CPT norms (Villemor-Amaral et al., 2020) and no statistically significant differences were found to justify specific tables according to these sociodemographic characteristics.

The fact that performance in the compulsory group test was more typical of people with a wide openness to experiences seems to be consistent with their own interest in handling firearms, since for this practice, there is, in a way, a curiosity and availability to face risks. This openness to experience demonstrated by the TPC needs to be related to stability in choices. In this sense, it is observed that part of the compulsory context sample showed a tendency to be more emotionally unstable, immature and with a lower level of intellectual development, while another part showed a more mature and predictable performance in their emotional responses (Table 1). Among these TPC indicators, there are some of the variables that are associated with characteristics considered as counter-indicators for handling firearms, as described by Pellini (2006) and Sá Hasbun et al. (2021), and which are considered restrictive psychological indicators, according to IN 78/14 (Brasil, 2014), namely emotional instability, immaturity and low intellectual level. These characteristics correspond to those established in CFP Resolution No. 01/2022 as important to be evaluated.

The compulsory group, when compared to the normative group, showed a greater predisposition to more introversive,

oppositional and negativistic behaviors, and may present more attitudes or gestures contrary to what is socially expected or requested (Table 2). These behaviors are considered restrictive psychological indicators, as defined by IN 78/14 in part of the participants evaluated in a compulsory situation. On the other hand, the normative group demonstrated more mechanism for repression of internal content that they would not like to reveal, as well as more immature behavior, which could also be an aggravation for handling firearms.

The data in Table 3 suggest that the compulsory group demonstrated control of their affects and emotions through strong restriction, inhibition or avoidance of emotionally very stimulating situations. This seems like a paradox, because all emotional avoidance inevitably leads to an increase in these same emotions, which can generate more anxiety and, as shown in Table 3, there were signs of impulse denial and anxiety. In addition, the compulsory group also showed emotional predisposition to stimulation overload, precarious fragility and stability, and less spontaneous and superficial affective manifestations, concomitant with low frustration tolerance with possible instability and irritability due to external demands. The combination of these indicators in the same TPC protocol would correspond to restrictive psychological indicators, according to IN 78/14 (Brazil, 2014).

In this sense, it is important to pay attention to the type of data being considered. In the temporal stability study carried out with the TPC (Villemor-Amaral et al., 2015) it was found that the frequency of colors is a variable that can change from one situation to another, while the formal aspect and the chromatic formula obtained good stability levels. In other words, the TPC indicators related to the use of colors seem to reflect the emotional state, while the chromatic formula and the formal aspect involve indicators that denote a more typical functioning of the examinee.

As pointed out by Faiad (2021), mandatory normative assessments refer to situations in which the examinee goes through the assessment process to obtain some benefit or right, in this case, authorization to handle a firearm. Thus, in a situation of compulsory assessment, examinees are expected to feel more anxious and worried about their performance, which can generate negative emotions. Thus, the TPC colors can contribute to the understanding of how people deal with their emotions in certain situations. On the other hand, performance in the chromatic formula and in the formal aspect would tend to inform a more structural functioning of the person, and it is important that these indicators are considered a priori to set the tone for how the person tends to function in their daily lives.

The only study found that addressed CPD in a mandatory normative context, as defined by Faiad et al. (2021), was carried out with drivers (Tawamoto & Capitão, 2010). In this study, the authors identified the combination of decreased Green with increased Red related to offenses in the context of traffic. Although in this study the simultaneous use of

Colors by pairs was not considered, there was an increase in green and a decrease in red, reinforcing the importance of the emotional aspects involved in the use of these colors for the compulsory context.

The compulsory group also showed a significant increase in yellow and white colors, and a decrease in Cold Syndrome. These data can be explained by the candidates' motivation to use firearms, more concerned with showing themselves socially adequate and not revealing their true feelings. Again, care is required with these direct applications of interpretations employed in individual protocols.

After understanding the interpretive possibilities of the differences between the two groups, it is emphasized that, for this analysis, it was always necessary to integrate the data from the different indicators. For this discussion, the set of characteristics that stood out were analyzed in terms of the collective, while in the psychological assessment these interpretations occur at the individual level of the candidate for handling a firearm, always relating the interpretive meanings of the indicators. In other words, it would not be possible to identify one or another indicator that would be more or less suitable for selecting who could or could not handle a firearm, in particular, because sometimes the increase or decrease of an indicator has an effect on the other indicators. Therefore, it will only be possible to understand the dynamics of an individual's emotional and cognitive functioning by analyzing the set of indicators.

It is considered important to reinforce that psychology professionals, when working in this field, consider the current normative guidelines, such as Decree No. 10.629/21 (Brazil, 2021), IN 78/14 (Brazil, 2014) and the CFP guidelines, in particular CFP Resolution No. 1/2022, for carrying out psychological assessment for granting registration and/or possession of a firearm. In this regard, it is also necessary to reaffirm that psychological assessment is a process composed of different evaluation techniques and strategies aimed at understanding the person for decision-making (CFP, 2022). Thus, the TPC data of candidates for the handling of

firearms must always be considered together with the other evaluative strategies adopted, aiming at understanding the person in their life context.

By way of conclusion, the novelty of this article is highlighted insofar as no other articles were found that compared the performance of the TPC between candidates for granting the use of firearms and the normative sample. In the sample of the compulsory group, characteristics were identified that correspond to those considered relevant to be measured in a psychological assessment for handling a firearm (CFP, 2022), suggesting that the TPC can contribute to this evaluative context. However, the scarcity of studies designed with the objective of searching for evidence of validity for the use of the TPC in these contexts is highlighted, which, without a doubt, would be an important contribution to the area.

The fact that this study was based on samples from databases produces some limitations, such as the differences between the groups mentioned throughout the article (sample size, sociodemographic characterization, and motivation to perform the task). Although it was demonstrated, through logistic regression, that these differences had little influence on the results, it is necessary to consider that there is a small percentage of influence that could be more accurate in other studies.

It is noteworthy, as previously stated, that in a Psychological Assessment it is always necessary to consider the set of indicators, that is, each data generated must be associated with the other information obtained about the person during the process. This integrated analysis is essential to observe how the person expresses their personality characteristics in their daily lives. Thus, future studies could seek evidence of the validity of the CPT for this and other contexts of compulsory assessments, as well as make the use of the CPT simultaneously with other instruments of Psychological Assessment used in these contexts. These reflections seek to contribute to the development of PA in our country.

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