Health Sciences Quarterly
eISSN: 2791-6022

Health Sci Q
e-ISSN: *2791-6022,* ***DOI:*** *10.26900/hsq.3112*
2026; 6(2):363-376, Frequency: *Quarterly*

HOLISTENCE PUBLICATIONS

ORIGINAL ARTICLE

Assessment of victims' legal perception and self-defense capacity in Forensic Medicine: A retrospective analysis

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Article History:

Received: 2026-01-28

Accepted: 2026-04-01

Online Published: 2026-04-27

Keywords:

Forensic medicine, vulnerable victim, perception capacity, self-defense, forensic psychiatry

Abstract

This study aimed to examine the associations between forensic evaluations of victims' ability to perceive the legal meaning and consequences of the act, self-defense capacity, and statement credibility, and various sociodemographic and clinical factors in cases referred for medico-legal assessment. A retrospective analysis was conducted on 112 adult victims (≥18 years) who underwent forensic medical evaluation at the Karabük Branch of the Council of Forensic Medicine between January 1, 2020, and December 31, 2022. Sociodemographic variables (age, sex, education level, employment status, and living arrangement), clinical characteristics (psychiatric and neurological/physical disorders), and substance use histories were analyzed in relation to forensic opinions regarding perception capacity, self-defense ability, and statement credibility. Chi-square tests and Cramér's V coefficient were used for statistical analysis. In 25.9% of cases, victims were assessed as unable to perceive the legal meaning and consequences of the act, and 38.5% were considered unable to defend themselves due to physical and/or psychological reasons. Strong associations were found between perception capacity and both self-defense ability and statement credibility ($p<0.001$). Lower educational level (V = 0.318, $p=0.010$), presence of psychiatric disorders (V = 0.315, $p=0.011$), and residence in state-run institutions (V = 0.315, $p=0.011$) were significantly associated with reduced perception capacity. Significant associations were also observed between crime type and both living arrangement (V = 0.316, $p=0.013$) and smoking status (V = 0.255, $p=0.012$).

Citation: Liman Z. Assessment of victims' legal perception and self-defense capacity in Forensic Medicine: A retrospective analysis. Health Sci Q. 2026;6(2): 355-376. doi: 10.26900/hsq.3112

Victims' perception capacity and vulnerability cannot be explained by a single factor and should be evaluated through an integrated consideration of clinical, sociodemographic, and contextual variables. A holistic, function-oriented forensic approach may enhance the objectivity and scientific basis of judicial decision-making.

Introduction

Discernment capacity, one of the fundamental concepts used in the fields of law and forensic psychiatry, is considered a basic criterion in legal assessments such as criminal responsibility, capacity to act, and the validity of consent [1]. An individual's ability to comprehend the meaning and consequences of an act he or she has committed, and to evaluate its effects on oneself or others, indicates the presence of discernment capacity. This ability may be temporarily or permanently diminished in situations such as minority, intellectual disability, mental illness, or substance use. Article 15 of the Turkish Civil Code clearly states that individuals who lack discernment capacity cannot be held liable for their acts [2], and established legal practice aims to protect such individuals in both criminal and civil proceedings.

In forensic medicine, the evaluation of victims is not limited to identifying physical findings alone. The victim's mental state at the time of the event, capacity to perceive the legal meaning and consequences of the act, ability to defend oneself physically or mentally, and the credibility of statements constitute key elements that may directly influence the judicial process. These assessments play a decisive role in determining the nature of the offense and establishing the offender's legal responsibility, and they represent questions that are frequently expected to be addressed in expert reports prepared by judicial authorities and forensic psychiatric experts [3,4]. In Türkiye, studies from different forensic medicine clinics have also discussed in detail the medico-legal implications of clinical characteristics of victims, particularly in cases of violence against women [5].

The Turkish Penal Code regulates situations in which the victim's physical or mental inability to defend oneself or diminished capacity to perceive may constitute an aggravated form of the offense or a sentencing enhancement. In this context, in crimes such as intentional homicide, intentional injury, torture, torment, sexual offenses, and certain offenses against property, whether the act was committed against an individual who was unable to defend oneself physically or mentally is taken into account; and in offenses such as fraud and sexual offenses, whether the offender exploited the victim's diminished capacity to perceive is particularly taken into consideration by the legislator [6].

Similarly, in other legal systems, personal characteristics of victims—such as age, physical or mental disability, illness, or incapacity—play an important role in evaluating the mode of commission of the offense and the offender's degree of responsibility. For example, sentencing guidelines in England and Wales state that the presence of personal conditions such as age, illness, or disability makes the offense more serious and must be considered an aggravating factor during sentencing [7,8]. A comparable approach is adopted in the United States federal criminal justice system, where the Federal Sentencing Guidelines define situations in which the victim is vulnerable due to age, physical or mental disability, or illness as a sentencing enhancement under the category of "*vulnerable victim*" [9]. In continental European legal systems, European Union regulations and guidelines conceptualize the "vulnerable victim" as a status requiring the combined consideration of the victim's personal characteristics and contextual factors related to the offense, and foresee special protective and evaluative mechanisms throughout criminal proceedings [10,11].

Forensic psychiatric evaluations conducted in this context require the integrated consideration of numerous factors, including the type of offense, the victim's and suspect's anamnesis, and medical and psychological state before and during the event; and, when necessary, they may be supported by follow-up under observation and re-examination. Presenting findings related to the victim's mental or neurological status in a manner comprehensible to non-medical legal actors is important for strengthening the scientific basis of expert reports. Accordingly, forensic examinations of victims adopting an approach that evaluates not only physical findings but also psychiatric and neurological status, statements obtained at different times, history of substance or alcohol use, and level of education, provide a holistic framework consistent with the principles of forensic medicine and ethics [12,13].

This study was conducted to examine the relationships between findings obtained from forensic assessments of crime victims referred by judicial authorities and clinical and sociodemographic variables, and to contribute to the literature in the fields of forensic medicine and forensic psychiatry.

Materials and Methods

Ethical approval

Ethical approval for this retrospective and descriptive study based solely on archival data was obtained from the Non-Interventional Clinical Research Ethics Committee of Karabük University (approval date: 03/11/2025, decision number: 2025/2548). No personal identifying data were used at any stage, and confidentiality principles were strictly observed. All procedures complied with the ethical principles of the Declaration of Helsinki.

Study design and sample

Forensic expert reports of adult victims (≥18 years) evaluated at the Karabük Branch of the Council of Forensic Medicine between 01.01.2020 and 31.12.2022 were retrospectively reviewed. Cases were included in the study if the forensic evaluation aimed to determine: (1) whether the victim had the capacity to perceive the legal meaning and consequences of the act or to direct their behavior, (2) whether the victim could defend themselves physically or mentally, and (3) whether their statements could be considered reliable.

Cases were excluded if they were: (1) under 18 years of age, (2) referred solely for assessment of injury characteristics *(medico-legal injury report)*, (3) inconclusive due to insufficient findings, (4) referred to the upper council, or (5) hospitalized for observation.

After applying these criteria, 112 cases were included in the study. Sociodemographic data (age, sex, residence, and educational status) and clinical data (psychiatric, neurological, or physical diagnoses, and history of smoking or alcohol use) recorded in the reports were analyzed together with the forensic evaluation outcomes.

Data collection and variables

Information regarding psychiatric, neurological, and other medical conditions was obtained from file records at the time of application. In cases where a suspected diagnosis first emerged during the forensic evaluation, relevant specialty consultations were requested, and the diagnoses reported by clinicians were used for classification. Disease-related variables were analyzed based on this verification process. While the capacity to perceive the legal meaning and consequences of the act was evaluated in all cases, other medico-legal assessments—such as self-defense capacity and credibility of statements—were requested selectively by judicial authorities; therefore, these variables were not available for all cases.

In statistical analyses, the following were classified as *neurological and/or physical conditions*: dementia, hearing loss, visual impairment or loss, gait disorder, congenital hip dislocation, knee or hip

arthrosis, limb amputation, sequelae of cerebral palsy, sequelae of poliomyelitis, pregnancy, Down syndrome, scoliosis, diabetes, and advanced age.

The following were classified as *psychiatric disorders*: psychotic disorders, mood disorders, and intellectual disability. Data regarding illicit substance use were not included in statistical analyses due to insufficient or non-verifiable documentation, which could otherwise lead to misleading analytical outcomes.

To facilitate analysis and interpretation, crime types were grouped into two main categories: (1) *Offenses against property*: fraud, property damage, theft, etc. (2) *Offenses against the person*: intentional injury, sexual assault, threats, deprivation of liberty, etc.

Living arrangements were classified into four categories to support analytical clarity: (1) *Relatives*: individuals living with parents, siblings, grandparents, or other relatives, (2) *Nuclear family*: individuals living with spouse and/or children, (3) *Alone, (4) In state-run institutions*: individuals residing in state-run protective or supervisory institutions.

Statistical analysis

Statistical analyses were performed using SPSS version 27.0. Because the data were categorical, the chi-square (χ^2) test was used. In 2×2 contingency tables, Pearson's chi-square, Yates' continuity-corrected chi-square, or Fisher's exact test were applied based on expected cell frequencies. In r×c contingency tables, Fisher's exact test was used when more than 20% of the expected cell counts were below 5; otherwise, Pearson's chi-square test was preferred. Group differences were evaluated using Adjusted Residual values. A *p*-value of <0.05 was considered statistically significant. The strength of the association between variables was assessed using Cramér's V coefficient.

Results

Sociodemographic evaluation

The mean age of the 112 cases included in the study was 35.76 ± 20.41 years, ranging between 18 and 90 years. Regarding age distribution, 42.9% (n = 48) were 18–24 years, 31.3% (n = 35) were 25–44 years, 12.5% (n = 14) were 45–64 years, and 13.4% (n = 15) were ≥65 years. Of the cases, 40.2% (n = 45) were male and 59.8% (n = 67) were female.

Among the examined offenses, 17.9% (n = 20) involved crimes against property, while 82.1% (n = 92) involved crimes against persons. It was determined that 74.1% of the cases were not engaged in any form of employment.

Regarding educational level, 25.9% (n = 29) had never attended school or had dropped out of primary school, 55.4% (n = 62) had completed primary or middle school, 11.6% (n = 13) had completed high school or higher education, and 7.1% (n = 8) had received special education.

Regarding residence status at the time of forensic evaluation, 60.7% (n = 68) lived with relatives, 27.7% (n = 31) lived with their nuclear family, 3.6% (n = 4) lived alone, and 8.0% (n = 9) resided in state-run institutions (Table 1).

Clinical characteristics and disability/disease status

Based on the recorded diagnoses, 53.6% (n = 60) of the cases had a psychiatric disorder, 25.0% (n = 28) had a neurological and/or physical disorder, and 8.0% (n = 9) had a comorbidity of neurological and psychiatric disorders. In 13.4% (n = 15) of the cases, no disability or disease was identified.

Within the psychiatric disorder group, diagnoses included psychotic disorder (n = 6), mood disorder (n = 4), and intellectual disability (n = 50). A history of smoking was present in 52.7% of the cases, and a history of alcohol use was present in 11.6% (Table 1).

Associations between sociodemographic variables and report outcomes

According to the forensic report outcomes, 25.9% of the cases were assessed as unable to perceive the legal meaning and consequences of the act, 11.9% were unable to defend themselves physically, and 26.6% (n = 29) were unable to defend themselves psychologically against the event in which they were victims. In 24.0% of the cases, the victims' statements regarding the event were considered credible based on strong supporting evidence, whereas in 2.0% of the cases the statements were assessed as not credible (Table 1).

The results of the statistical analyses conducted to examine the associations between various sociodemographic and clinical variables and the forensic report outcomes are presented in this section.

Table 1. General characteristics of the cases.

Variables	Groups	n	%
Sex	Male	45	40.2
	Female	67	59.8
Type of Offense	Against Property	20	17.9
	Against the Person	92	82.1
Legal Perception of the Act	Intact (Able to perceive)	83	74.1
	Impaired (Unable to perceive)	29	25.9
Self-Defense Capacity	Intact (Able to defend oneself)	67	61.5
	Impaired – Physical	13	11.9
	Impaired – Mental	29	26.6
Credibility of Statements	Credible	74	74
	Credible – Supported by strong evidence	24	24
	Not credible	2	2
Educational Level	No schooling / primary school dropout	29	25.9
	Primary / middle school graduate	62	55.4
	High school or higher	13	11.6
	Special education	8	7.1
Employment Status	Not employed	83	74.1
	Employed	29	25.9
Living Arrangements	Relatives[1]	68	60.7
	Nuclear family[2]	31	27.7
	Living alone	4	3.6
	In state-run institution	9	8
Disability / Disease Status	None	15	13.4
	Psychiatric disorder	60	53.6
	Neurological and/or physical disorder	28	25
	Neurological and psychiatric disorder	9	8
Smoking	Yes	59	52.7
	No	53	47.3
Alcohol Use	Yes	13	11.6
	No	99	88.4

[1] *living with parents, siblings, grandparents or other relatives*

[2] *living with spouse and/or children*

Note: In all cases, the capacity to perceive the legal meaning and consequences of the act was evaluated. However, assessments regarding self-defense capacity and credibility of statements were requested by judicial authorities on a case-by-case basis; therefore, these variables were not available for all cases, and their frequencies do not sum to the total sample size (n = 112).

Gender-related findings

Statistical comparisons between gender and the variables of offense type, report outcome, and disability/disease status revealed a statistically significant difference between gender and offense type ($p<0.05$). The rate of victimization in crimes against property was higher among males (28.9%) compared to females (10.4%), whereas victimization in crimes against persons was significantly higher among females (89.6%) compared to males (71.1%). However, the strength of the association between gender and offense type was low (V = 0.236, $p=0.022$). No statistically significant differences were identified between gender and the other variables ($p>0.05$).

Age-related findings

Statistical comparisons were conducted between age and the variables of offense type, report outcome, and disability/disease status. The analyses revealed a statistically significant association between age and disability/disease status ($p<0.001$). The strength of this association was moderate (Cramér's V = 0.323), and 66.7% of the cases aged 65 years and older had neurological and physical disorders. No statistically significant differences were found between age and the other variables ($p>0.05$).

Findings related to offense type

Statistical comparisons between offense type and the variables of educational level, employment status, residence, smoking, alcohol use, and report outcome showed that residence and smoking had statistically significant associations with offense type ($p<0.05$). The rate of victimization in crimes against persons was significantly higher among individuals living with relatives (65.2%, $p<0.05$). In contrast, victimization in crimes against property was higher among individuals living alone. A moderate association was detected between offense type and residence (V = 0.316, $p=0.013$). Among cases involving crimes against property, 80% were smokers, and a low-strength but statistically significant association was found between offense type and smoking status (V = 0.255, $p=0.012$). No statistically significant differences were found between offense type and the other variables ($p>0.05$) (Table 2).

Table 2. Comparative analysis of variables by offense type.

Variables	Groups	Against Property (n, %)	Against Person (n, %)	Total (n, %)	Test Statistics	df	*p*	Cramér's V and *p*-value
Legal Perception of the Act	Intact	17 (85)	66 (71.7)	83 (74.1)	0.894	-	0.344	V=0.116
	Impaired	3 (15)	26 (28.3)	29 (25.9)				*p*=0.271
Self-Defense Capacity	Intact	13 (68.4)	54 (60)	67 (61.5)	1.481	2	0.531	V=0.117
	Impaired – Physical	3 (15.8)	10 (11.1)	13 (11.9)				*p*=0.531
	Impaired – Mental	3 (15.8)	26 (28.9)	29 (26.6)				
Credibility of Statements	Credible	15 (88.2)	59 (71.1)	74 (74.0)	1.833	-	0.469	V=0.150
	Credible – supported by strong evidence	2 (11.8)	22 (26.5)	24 (24.0)				*p*=0.284
	Not credible	0 (0)	2 (2.4)	2 (2.0)				
Educational Level	No schooling / primary dropout	8 (40)	21 (22.8)	29 (25.9)	3.961	-	0.234	V=0.196
	Primary / middle school	9 (45)	53 (57.6)	62 (55.4)				*p*=0.232
	High school or higher	3 (15)	10 (10.9)	13 (11.6)				
	Special education	0 (0)	8 (8.7)	8 (7.1)				

Employment Status	Not employed	13 (65)	70 (76.1)	83 (74.1)	0.554	1	0.457	V=0.097
	Employed	7 (35)	20 (23.9)	29 (25.9)				*p*=0.305
Living Arrangements	Relatives[1]	8 (40)	60 (65.2)	68 (60.7)	9.234	-	**0.036**	**V=0.316**
	Nuclear family[2]	7 (35)	24 (26.1)	31 (27.7)				***p*=0.013**
	Alone	3 (15)	1 (1.1)	4 (3.6)				
	In state-run institution	2 (10)	7 (7.6)	9 (8.0)				
Disability / Disease Status	None	4 (20)	11 (12)	15 (13.4)	2.865	-	0.399	V=0.169
	Psychiatric disorder	12 (60)	48 (52.2)	60 (53.6)				*p*=0.357
	Neurological and/or physical disorder	4 (20)	24 (26.1)	28 (25.0)				
	Neurological and psychiatric disorder	0 (0)	9 (9.8)	9 (8.0)				
Smoking	Yes	16 (80)	43 (46.7)	59 (52.7)	6.018	-	**0.014**	**V=0.255**
	No	4 (20)	49 (53.3)	53 (47.3)				***p*=0.012**
Alcohol Use	Yes	2 (10)	11 (12)	13 (11.6)	0.061	1	1.000	V=0.023
	No	18 (90)	81 (88)	99 (88.4)				*p*=1.000

[1] *living with parents, siblings, grandparents or other relatives*

[2] *living with spouse and/or children*

Note: Categorical variables were compared using Pearson's chi-square, Yates' continuity-corrected chi-square, or Fisher's exact test, as appropriate. The first p-values represent the results of the overall statistical tests. The p-values presented alongside Cramér's V correspond to the same tests and are provided to facilitate interpretation of the strength of associations. Degrees of freedom (df) are not reported for analyses performed using Fisher's exact test.

Findings related to report outcomes

Statistical comparisons were conducted between the variable of perception of the legal meaning and consequences of the act (according to the report outcome) and the variables of self-defense status, credibility of statements, educational level, employment status, residence, disability/disease status, smoking, and alcohol use.

The analyses revealed a high-strength and statistically significant association between perception of the legal meaning and consequences of the act and both self-defense status (V = 1.000, $p<0.001$) and credibility of statements (V = 0.860, $p<0.001$), respectively.

Regarding educational level, the proportion of individuals who could not perceive the legal meaning and consequences of the act was higher among those who had never attended school or had dropped out of primary school (44.8%), and a moderate association was observed between the variables (V = 0.318, $p=0.010$).

Regarding residence, a moderate association (V = 0.315, $p=0.011$) was detected, with a significantly higher proportion of individuals living with their nuclear family being able to perceive the legal meaning and consequences of the act (34.9%). In contrast, this proportion was lower among individuals residing in state-run institutions (4.8%).

Regarding disability/disease status, a moderate association (V = 0.315, $p=0.011$) was identified, and psychiatric disorders were more frequently observed among individuals who were assessed as unable to perceive the legal meaning and consequences of the act (75.9%) (Table 3).

Table 3. Comparison of variables according to the status of perceiving the legal meaning and consequences of the act.

Variables	Groups	Intact (n, %)	Impaired (n, %)	Total (n, %)	Test Statistics	df	*p*	Cramér's V and *p*-value
Type of Offense	Against Property	17 (21)	3 (10.7)	20 (17.9)	0.894	1	0.344	V=0.116
	Against Person	66 (79.5)	26 (89.7)	92 (82.1)				*p*=0.271
Self-Defense Capacity	Intact	67 (83.8)	0 (0)	67 (61.5)	115.530	-	**<0.001**	**V=1.000**
	Impaired – Physical	13 (16.3)	0 (0)	13 (11.9)				***p*<0.001**
	Impaired – Mental	0 (0)	29 (100)	29 (26.6)				
Credibility of Statements	Credible	70 (97.2)	4 (14.3)	74 (74)	74.046	-	**<0.001**	**V=0.860**
	Credible – supported by strong evidence	1 (1.4)	23 (82.1)	24 (24)				***p*<0.001**
	Not credible	1 (1.4)	1 (3.6)	2 (2)				
Educational Level	No schooling / primary dropout	16 (19.3)	13 (44.8)	29 (25.9)	11.607	-	**0.006**	**V=0.318**
	Primary / middle school	49 (59)	13 (44.8)	62 (55.4)				***p*=0.010**
	High school or higher	13 (15.7)	0 (0)	13 (11.6)				
	Special education	5 (6)	3 (10.3)	8 (7.1)				
Employment Status	Not employed	58 (69.9)	25 (86.2)	83 (74.1)	2.195	1	0.138	V=0.163
	Employed	25 (30.1)	4 (13.8)	29 (25.9)				*p*=0.084
Living Arrangements	Relatives[1]	47 (56.6)	21 (72.4)	68 (60.7)	11.845		**0.005**	**V=0.315**
	Nuclear family[2]	29 (34.9)	2 (6.9)	31 (27.7)				***p*=0.011**
	Alone	3 (3.6)	1 (3.4)	4 (3.6)				
	In state-run institution	4 (4.8)	5 (17.2)	9 (8)				
Disability / Disease Status	None	15 (18.1)	0 (0)	15 (13.4)	11.934		**0.006**	**V=0.315**
	Psychiatric disorder	38 (45.8)	22 (75.9)	60 (53.6)				***p*=0.011**
	Neurological and/or physical disorder	24 (28.9)	4 (13.8)	28 (25)				
	Neurological and psychiatric disorder	6 (7.2)	3 (10.3)	9 (8)				
Smoking	Yes	45 (54.2)	14 (48.3)	59 (52.7)	0.304	1	0.667	V=0.052
	No	38 (45.8)	15 (51.7)	53 (47.3)				*p*=0.667
Alcohol Use	Yes	9 (10.8)	4 (13.8)	13 (11.6)	0.182	1	0.738	V=0.040
	No	74 (89.2)	25 (86.2)	99 (88.4)				*p*=0.738

[1] living with parents, siblings, grandparents or other relatives

[2] living with spouse and/or children

Note: Categorical variables were compared using Pearson's chi-square, Yates' continuity-corrected chi-square, or Fisher's exact test, as appropriate. The first p-values represent the results of the overall statistical tests. The p-values presented alongside Cramér's V correspond to the same tests and are provided to facilitate interpretation of the strength of associations. Degrees of freedom (df) are not reported for analyses performed using Fisher's exact test.

Discussion

In modern criminal law practice, committing an offense against a victim characterized as "*vulnerable*" is generally considered an aggravating factor in sentencing. However, the broad scope of the concept of "*vulnerability*" has been debated in the literature, with concerns that ambiguity in its definition may lead to inconsistencies in practice and, in some cases, overlap with the notion of severe harm suffered by the victim [14]. This highlights the need to substantiate vulnerability not merely as an abstract categorical status, but through concrete assessments of the victim's capacity to perceive the legal meaning and consequences of the act, their physical or psychological ability to defend themselves at the time of the incident, and the credibility of their statements. In this study, forensic report outcomes based on these three dimensions were analyzed in relation to clinical and sociodemographic variables, providing insight into contextual factors that may influence victims' perception capacity and self-defense status.

The mean age of approximately 36 years and the predominance of individuals aged 18–44 in our sample suggest that this age group may have higher rates of forensic referrals due to greater social and economic activity, which may increase the likelihood of contact with crime.

In this study, 59.8% of the cases were female and 40.2% were male, indicating that female victims were more frequently referred by judicial authorities to the forensic medicine unit for the assessment of whether they qualified as "vulnerable victims." In contrast, data from the 2024 Türkiye Violence Map [15] report that the majority of victims of interpersonal violence are male, although female victims are proportionally more represented in more severe forms of violence such as homicide and sexual offenses. This discrepancy may be related to the fact that our study included cases in which the victim's perception capacity, ability for self-defense, and credibility of statements were questioned within the forensic medical context. Indeed, in offense types associated with more severe consequences or more pronounced vulnerability, female victims appear to be referred more frequently for forensic medical evaluation.

In the current study, the fact that most cases had a low level of education and a substantial proportion were not engaged in employment suggests that these victims may occupy a more vulnerable socio-economic position. However, low educational attainment or unemployment should not be interpreted in itself as an indicator of insufficient capacity to perceive the legal meaning and consequences of the act or to defend oneself. Although a statistically significant association was identified between educational level and perception capacity in this study, a considerable number of cases presented with co-occurring intellectual disability, psychiatric disorders, or neurological conditions, which emerge as key factors that may limit both the continuation of formal education and cognitive and functional capacity. Therefore, educational and employment status should be regarded not as direct determinants, but rather as contextual indicators reflecting the individual's broader clinical condition and level of functioning.

Within this framework, low educational level and unemployment should not be treated as standalone markers of insufficiency; instead, potential effects of underlying clinical and functional limitations on access to education, continuity of schooling, participation in working life, and perception capacity should be evaluated together. Accordingly, in forensic medical assessments of victims with limited educational or occupational backgrounds, integrating sociodemographic characteristics with clinical findings within a holistic approach may contribute to a more accurate interpretation of vulnerability.

In this study, examination of forensic report outcomes revealed a strong relationship between perception of the legal meaning and consequences of the act and the evaluations regarding self-defense and credibility of statements. This finding reflects the natural consequence of the fact that these criteria are assessed collectively in forensic practice on the basis of the same mental and physical characteristics of the individual. It therefore indicates that the report outcomes in question should not be considered as independent variables, but as interrelated assessments shaped within the broader context of the victim's clinical and functional integrity.

In the present study, 25.9% of the cases were assessed as unable to perceive the legal meaning and consequences of the act, and regarding self-defense, 11.9% were deemed unable to defend themselves physically and 26.6% were deemed unable to defend themselves psychologically. Considering that a substantial proportion of these cases were referred for forensic medical evaluation by judicial authorities or legal representatives due to concerns that the victim might be vulnerable, it is noteworthy that these rates were lower than expected. This finding indicates that vulnerability in forensic medicine is evaluated on the basis of concrete clinical and functional criteria rather than hypothetical assumptions, and that referrals do not automatically result in conclusions of impaired perception or insufficient self-defense.

It should also be noted that during criminal proceedings, parties may request assessments of the victim's cognitive or psychiatric condition as part of their right to defense and legal remedy, and in rare cases, malingering or exaggerated complaints associated with cognitive capacity or psychiatric status may occur. Although assessment requests lacking clinical and functional justification may increase the workload of forensic medical units, this does not negate the necessity of such evaluations; on the contrary, it underscores the importance of conducting them in a scientific, objective, and criteria-based manner to ensure the protection of victims' rights, to avoid overlooking potential vulnerability, and to maintain fairness in the judicial process. In this respect, our findings suggest that forensic psychiatric experts adopt a balanced and case-specific approach that accounts for individual differences, rather than broad, automatic interpretations in favor of the victim.

In the current research, the rate of victimization in crimes against property was higher among males (28.9%) compared to females (10.4%), which may be related to the fact that men are more frequently present in public spaces and engaged in economic activities in daily life [16]. In contrast, the significantly higher rate of victimization among females in crimes against persons (89.6% versus 71.1% in males) suggests that women may be more prominently positioned as victims in offense types such as physical and sexual violence. Similarly, both national and international sources report that women are disproportionately victims of person-directed offenses, particularly sexual abuse and violence, and that this difference is associated with factors such as participation in public life, gender roles, and patterns of social interaction [17,18]. These findings indicate that victimization is not solely an individual phenomenon, but also one influenced by gender roles and social interaction contexts.

In the present study, the association between offense type and living arrangement suggested that crimes against persons were more frequent among individuals living with relatives, whereas crimes against property were more frequent among individuals living alone. This pattern points to the differing social contexts in which victimization emerges. Living in shared household settings appears to align with crimes against persons, which tend to occur within close interpersonal relationships. Indeed, in the study by Hösükler et al. on offenses involving violence against women, it was reported that victimization frequently occurred at the hands of individuals with whom the victim cohabited or maintained close relationships, and that this context significantly shaped both the nature of the offense and its impact on the victim [19]. Conversely, living alone may be associated with increased vulnerability to property-related offenses due to spending more time in public spaces, individual lifestyle practices, and limited protective social support [16,20].

In addition, the finding in this research that victimization in crimes against property was higher among individuals who smoked, and that a low-strength but statistically significant association existed between offense type and smoking status, suggests that smoking may be a marker of lifestyle patterns associated with living alone and social isolation rather than a direct causal factor in crime victimization. Indeed, the literature indicates that smoking predicts increases in social isolation and loneliness over time [21], and Mendelian randomization analyses have shown that smoking may causally increase social isolation, whereas loneliness may influence smoking initiation and cessation behaviors [22,23]. Although the

cross-sectional/retrospective design of our study precludes causal inference, this reciprocal relationship suggests that smoking may be indirectly associated with victimization in crimes against property—observed more frequently among individuals living alone in our sample—through shared contextual factors such as limited social support.

In this research study, a moderate association was identified between living arrangement and the capacity to perceive the legal meaning and consequences of the act; perception rates were higher among individuals living with their spouse and/or children (nuclear family), whereas markedly lower rates were observed among those residing in state-run institutions. The fact that individuals living within a nuclear family structure typically assume life roles such as marriage and parenthood suggests that social functioning, sense of responsibility, and cognitive abilities may be relatively preserved in this group, making higher perception rates a clinically expected finding. Conversely, a substantial proportion of individuals residing in state institutions are placed under care and protection due to advanced age, intellectual disability, or psychiatric and neurological disorders, which may explain the lower rates of legal perception capacity observed in this group. Similarly, the literature reports that living within marriage and family settings is associated with preserved or intact social and cognitive functioning, whereas legal perception capacity is often impaired among institutionalized individuals due to the higher burden of mental, psychiatric, and neurological disorders [24,25] Consistent with this, a moderate association was also found in our study between the presence of psychiatric illness and legal perception capacity, with lower perception rates observed among individuals with psychiatric disorders. Taken together, these findings suggest that living arrangement and disease status should not be viewed as isolated determinants of perception capacity, but rather as contextual indicators reflecting an individual's overall clinical status, cognitive functioning, and ability to maintain social roles.

Limitations

This study has several limitations. First, it includes cases in which forensic evaluation was requested due to suspected impairment in legal perception or vulnerability during the judicial process, and therefore does not represent all crime victims. This limits the generalizability of the findings to the broader victim population.

Although the study was conducted in a single center, the forensic unit from which the data were obtained is the only forensic medicine branch within the province, and therefore is considered to cover the majority of cases referred by judicial authorities for victim evaluation during the study period. Nevertheless, the findings should be interpreted with caution in terms of regional differences in forensic practices and sociodemographic characteristics.

Finally, although assessments regarding the capacity to perceive the legal meaning and consequences of the act, self-defense ability, and the credibility of statements are based on standardized criteria used in forensic medical practice, the retrospective design of the study limited the level of clinical and functional detail to the information available in existing reports.

Conclusion

In this study, cases referred by judicial authorities for the assessment of victims were retrospectively examined, and key medico-legal evaluations—such as the capacity to perceive the legal meaning and consequences of the act, self-defense ability, and the credibility of statements—were analyzed in relation to sociodemographic and clinical variables. The findings indicate that victimization and vulnerability cannot be explained by a single variable; rather, factors such as living arrangement, education and employment status, presence of psychiatric disorders, lifestyle patterns, and level of social support must be evaluated contextually and in combination.

In particular, the observation that property crimes were more frequent among individuals living alone, whereas offenses against the person were more common among those living with relatives or within a nuclear family, suggests that the social contexts in which victimization occurs differ substantially. Likewise, lifestyle indicators such as smoking appear to show indirect associations with victimization not through a direct causal link, but via shared contextual factors including social isolation, exposure to public settings, and limited protective social support.

Furthermore, the associations found between legal perception capacity and variables such as low educational attainment, unemployment, psychiatric illness, and residence in state-run institutions highlight the importance of considering these variables not as isolated determining causes, but as indicators reflecting an individual's broader clinical status and functional capacity.

Taken together, these findings underscore the importance of adopting a holistic approach in forensic medical practice when evaluating victims. Assessments should not be limited to diagnostic or categorical classifications; instead, clinical findings should be integrated with sociodemographic and contextual information. Such an approach is essential for safeguarding victims' rights and ensuring that judicial processes are conducted on a scientific and objective basis. By enabling calibrated and proportional evaluations of vulnerability, this perspective has the potential to strengthen decision-support processes within forensic medicine.

Acknowledgment

The author would like to thank Assistant Professor Eda Özkul (Department of Computer Science, Faculty of Science, Karadeniz Technical University) for her valuable support throughout the study.

Funding

This research received no specific grant from any funding agency in the public, commercial, or notfor-profit sectors.

Conflict of interest

The authors declare that they have no conflicts of interest relevant to this study.

Data availability statement

The data that support the findings of this study are not publicly available due to legal and ethical restrictions. Anonymized data may be made available from the corresponding author upon reasonable request and with permission of the relevant institutional authorities.

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