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Modern Forensic Medical Criteria for Identifying Suicidal Risk in Women

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Abstract Suicidal behavior among women represents a complex medico-social and forensic medical problem that requires objective expert evaluation based on an integrated assessment of morphological, circumstantial, and clinical-anamnestic data. Key forensic medical criteria enabling differentiation of suicidal behavior from other forms of violent and non-violent death were identified. The most significant morphological and circumstantial features characteristic of female suicide cases were determined. A retrospective analysis of 165 autopsy cases of women submitted for forensic medical examination between 2021 and 2025 at the Republican Scientific and Practical Center of Forensic Medical Examination (Namangan Branch) was conducted. The results of the study demonstrate the feasibility and diagnostic value of applying systematized forensic medical criteria for the assessment of suicidal behavior in women.

Keywords Suicidal behavior, Women, Forensic medical examination, Suicide risk, Medico-legal diagnostics, Forensic criteria

1. Introduction

Suicidal behavior among women remains a major public health issue with significant medico-social and legal consequences. Female suicide is influenced by a complex interaction of biological, psychological, hormonal, and social factors, including affective disorders, chronic stress, interpersonal conflicts, reproductive and endocrine disturbances, and socio-cultural expectations. These factors contribute to gender-specific patterns of suicidal behavior, which often differ from those observed in men [1,2,3].

In forensic medical practice, the determination of suicide as the manner of death in women presents particular challenges. Female suicidal acts are frequently characterized by less violent methods, ambiguous injury patterns, and circumstances that may mimic accidental death. As a result, suicide in women is often underdiagnosed or misclassified, especially in cases lacking clear circumstantial evidence [4].

Modern forensic diagnostics increasingly emphasizes the necessity of an integrated assessment that combines morphological findings, scene investigation data, toxicological results, and clinical-anamnestic information. However, the absence of standardized, gender-oriented forensic criteria limits the consistency and reproducibility of expert conclusions. Diagnostic uncertainty may lead to legal misinterpretation and negatively affect both judicial outcomes and suicide prevention strategies [5,6,7].

In this context, the development of systematized forensic medical criteria for assessing suicidal behavior in women is of critical importance. Such criteria should account for gender-specific manifestations of suicide and provide a structured framework for expert analysis.

Objective

To develop and systematize forensic medical criteria for the assessment of suicidal behavior in women based on a comprehensive analysis of autopsy material and associated medico-legal data.

2. Materials and Methods

A retrospective analysis was conducted on 165 autopsy cases of women who underwent forensic medical examination between 2021 and 2025 at the Republican Scientific and Practical Center of Forensic Medical Examination (Namangan branch). The study material included autopsy reports, histological findings, toxicological test results, investigative records, and available medical documentation. Cases were classified according to the manner of death and included completed suicides, attempted suicides with survival, and deaths from natural causes used as a comparative group. Morphological criteria were evaluated with particular attention to the nature, localization, multiplicity, and vitality of injuries. Circumstantial factors included scene investigation data, body position, evidence of struggle, and the presence of suicide-associated objects.

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Medico-biological indicators comprised toxicological findings and morphofunctional changes in vital organs. Clinical, anamnestic, and social factors were analyzed based on medical histories and investigative documentation. In a subgroup of women who survived suicide attempts, validated psychometric instruments were used to assess suicidal risk. Comparative and statistical analyses were applied to determine the diagnostic significance of the identified criteria.

3. Results and Discussion

The analysis demonstrated that forensic assessment of suicidal behavior in women requires a multidimensional approach. Morphological findings alone were insufficient to establish suicide with high diagnostic certainty, particularly in cases with atypical injury patterns or minimal external trauma.

In suicidal cases, characteristic injury features included method-consistent localization, limited defensive injuries, and clear signs of vitality. Circumstantial analysis revealed that scene characteristics such as the absence of struggle, body positioning, and contextual evidence played a crucial role in differentiating suicide from accidental or criminal death.

Medico-biological indicators, including toxicological results and morphofunctional changes in vital organs, provided essential corroborative evidence. Toxicological analysis frequently revealed psychoactive substances, alcohol, or medications capable of influencing behavioral control and emotional regulation.

In all studied cases of completed suicide among women, the results of comprehensive forensic medical examinations were additionally analyzed to ensure the accuracy and objectivity of forensic diagnostic conclusions (Fig. 1).

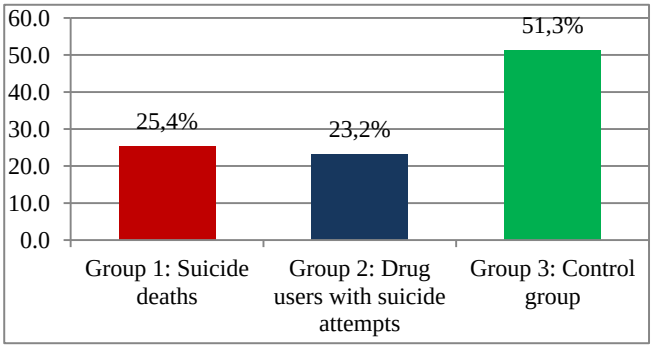

Figure 1. Distribution of women by study groups according to suicidal risk and outcomes

The study population was divided into three groups: Group 1 included 20 women (25.4%) who died from completed suicide; Group 2 consisted of 18 women (23.2%) who survived suicide attempts; and a control group comprised 40 deceased individuals who died from various natural causes, serving as a comparative reference.

The analysis was based on forensic reports, medical records, and documented manifestations of suicide-related findings in women, including cases examined within 48 hours from the time of death (Fig. 2). The study employed a systematic approach incorporating retrospective, morphological, forensic medical, and statistical methods. In addition, seasonal distribution of completed suicide cases among women was analyzed to identify potential temporal patterns (Fig. 3).

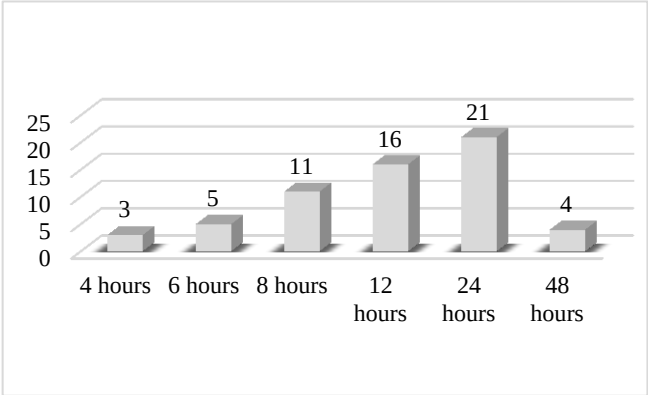

Figure 2. Cases examined within 48 hours after the incident

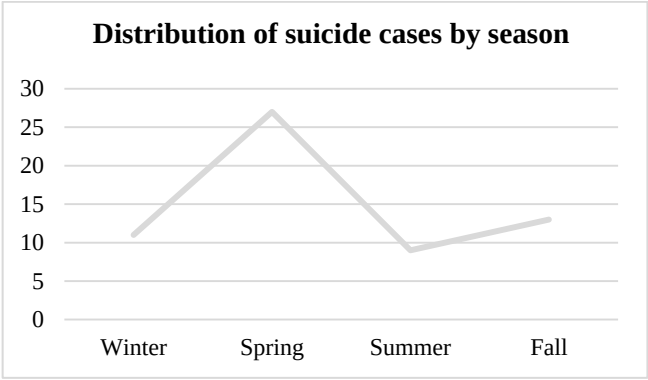

Figure 3. Analysis of suicide cases by season

Analysis of the seasonal distribution demonstrated that completed suicide cases among women occurred most frequently during the spring and autumn seasons, followed by winter and summer periods (Fig. 3).

In addition, psychometric assessment of suicide risk was conducted in a subgroup of 18 women who survived suicide attempts. Validated psychometric instruments were applied to evaluate suicidal ideation, affective instability, emotional reactivity, social pessimism, and impaired future orientation.

The results indicated that 7 individuals (38.0%) exhibited a low level of suicidal reactivity, 8 individuals (42.5%) demonstrated a moderate level, and 3 individuals (19.5%) showed a high level of suicidal predisposition (Fig. 4). Higher suicide risk was primarily associated with affective dysregulation, emotional demonstrativeness, pessimistic perception of the social environment, and limited coping capacity.

These psychometric findings provided supportive contextual information and were interpreted in conjunction with forensic medical, circumstantial, and medico-biological data, rather than serving as independent diagnostic criteria.

Table 1

Subscale diagnostic coefficient	Number of answers	Index
Demonstrative behavior	12, 14, 20, 22, 27	1, 2
Affective instability	1, 10, 20, 23, 28, 29	1, 1
Perceived uniqueness	1, 12, 14, 22, 27	1, 2
Identity diffusion	2, 3, 6, 7, 17	1, 5
Social pessimism	5, 11, 13, 15, 17, 22, 25	1
Cultural barrier breakdown	8, 9, 18	2, 3
Maximalism	4, 16	3, 2
Impaired future orientation	2, 3, 12, 24, 26, 27	1, 1
Anti-suicidal protective factor	19, 21	3, 2

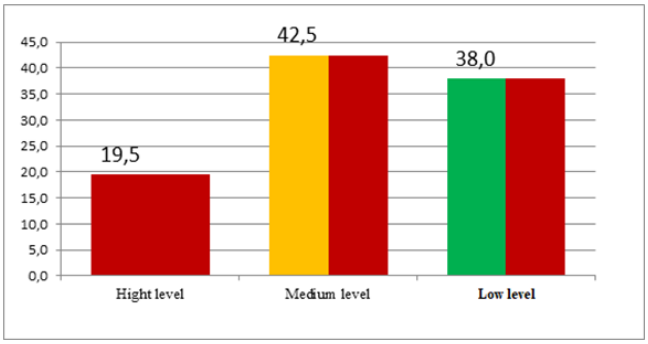

Figure 4. Level of suicidal tendency

Processing of the results obtained using a modified suicide risk questionnaire revealed differential distribution of psychological risk indicators across assessment scales (Fig. 5). The highest scores were observed for maximalism (13.0%), social pessimism (10.0%), affectivity (11.0%), and emotional demonstrativeness (11.0).

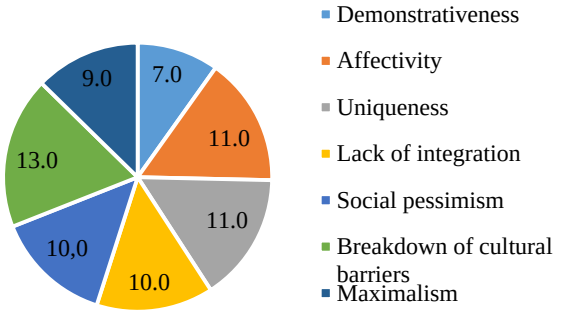

Figure 5. Distribution of psychosocial factors associated with suicidal risk

Emotional demonstrativeness, often externally perceived as attention-seeking behavior, reflects an internal "cry for help" and represents a clinically significant risk factor when combined with affective instability. Affectivity was characterized by the predominance of emotional responses over cognitive control during stress evaluation. In severe cases, this pattern may progress to affective blocking of rational judgment, substantially increasing suicidal risk.

4. Conclusions

The results of the present study support the feasibility and diagnostic value of implementing systematized forensic medical criteria for the assessment of suicidal behavior in women. A comprehensive evaluation integrating morphological findings, circumstantial evidence, and medico-biological indicators ensures a higher level of objectivity and reliability of forensic conclusions.

The proposed multidisciplinary approach may be recommended for routine application in forensic medical practice to improve differentiation of suicide from accidental and non-violent deaths and to enhance the evidentiary quality of expert opinions.

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