

Differences in propensity for aggressive behaviour in patients and the ability to suppress negative emotions in patients and nurses, divided by sociodemographic factors

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Abstract

Introduction: Knowledge about socio-demographic factors on the propensity for aggressive behaviour among patients and nurses is crucial for preventing aggression in healthcare. Ignoring or underestimating aggression can compromise the safety of medical staff. Insufficient staffing or inadequate qualifications in handling patients and their families further complicates effective interventions.

Aim of the research: To assess differences in propensity for aggressive behaviour in patients and the ability to suppress negative emotions in patients and nurses, divided by sociodemographic factors.

Material and methods: The study was conducted from May to December 2019 in clinical hospitals in Rzeszów. It involved 600 patients and 320 nurses. Patients included were those who gave informed consent, spent at least one day at the Clinical Hospital (excluding the Psychiatry Clinic), were over 18 years old, and scored at least 7 points on the Abbreviated Mental Test Score (AMTS). Patients received a 30-item survey covering socio-demographic factors, reported ailments, types of healthcare services, openness, and the effectiveness of received care. Additionally, they completed the Emotion Control Scale (CECS) and the Buss-Perry Aggression Questionnaire (BPAQ). Nurses completed a 23-item questionnaire addressing socio-demographic factors and patient behaviour, and the Emotion Control Scale (CECS).

Results and conclusions: Gender was found to significantly influence the propensity for physical aggression among patients, with men displaying higher levels ($p = 0.0003^*$). Physical aggression varied by education level, being highest among individuals with primary education and lowest among those with higher education ($p = 0.0005^*$). The highest level of anger suppression was observed among nurses aged 40–49 years, while the lowest was found among those aged 18–29 years.

Introduction

According to Kowalczyk *et al.*, aggressive behaviour stems not only from upbringing, current health conditions, and environmental and economic factors, but also socio-demographic variables [1]. Liu *et al.* suggest that studying aggressive behaviour is crucial for healthcare because it reveals its negative implications on public health, including increased utilisation of medical resources (e.g. in intensive care units, psychiatry, emergency departments) and economic costs [2, 3]. Kruti *et al.* describe aggression as an emotional state driven by external and internal factors, often accompanied by the urge to attack others [4]. According to Orzechowska *et al.*, the tendency of aggressive behaviour is triggered by a person's experiences, such as frequent observation of aggressive behaviour, emotional needs, and frustrations. The authors also believe that such behaviour is due to low economic and social status, stress factors, lack of social support, young age, and male gender [5]. According to Aranowska *et al.*, younger people are more likely to exhibit aggressive

behaviour. In men, aggression is biologically determined, while in women it depends on both biological and social factors [6]. A 2002 World Health Organisation report indicated that 4400 people die annually due to acts of violence [7]. Attention is paid to aggression in psychiatric wards due to the specific nature of patients in these units [8, 9]. However, increasing incidents of aggression in other wards also warrant attention. Ignoring or underestimating aggression can compromise the safety of medical staff. Insufficient staffing or inadequate qualifications in handling patients and their families further complicates effective interventions [10]. On the other hand, suppressing emotions may lead to emotional, social, and health-related disorders [11]. Researching the impact of socio-demographic factors on the propensity for aggressive behaviour among patients and nurses is crucial for preventing aggression in healthcare. An analysis of the PubMed, Scopus, Termedia, and Google Scholar databases revealed a lack of studies or reviews on the influence of socio-demographic factors on aggressive behaviour among patients and nurses.

Aim of the research

To assess differences in propensity for aggressive behaviour in patients and the ability to suppress negative emotions in patients and nurses, divided by sociodemographic factors.

Material and methods

Participants

The study was conducted from May to December 2019 in clinical hospitals in Rzeszów. It involved 600 patients and 320 nurses. Patients included were those who gave informed consent, spent at least 1 day at the Clinical Hospital (excluding the Psychiatry Clinic), were over 18 years old, and scored at least 7 points on the Abbreviated Mental Test Score (AMTS). Nurses were included if they voluntarily consented and worked in the clinics of Rzeszów hospitals (excluding those in the Psychiatry and Neonatology Clinics). Participants could withdraw from the study at any time. The final sample comprised 593 patient questionnaires (98.8% of the planned sample) and 300 nurse questionnaires (93.7% of the planned sample).

Measurements

Patients were assessed with the AMTS to confirm eligibility. All participants completed specifically designed questionnaires. Patients received a survey covering socio-demographic factors. Additionally, they completed the Emotion Control Scale (CECS) and the Buss-Perry Aggression Questionnaire (BPAQ). The CECS contains 21 statements evaluating general emotional control as well as anger, depression, and anxiety. The BPAQ assesses hostility, verbal aggression, anger, and physical aggression through 29 questions. Nurses completed a questionnaire addressing socio-demographic factors.

Statistical analysis

This statistical analysis was conducted using Statistica software. For comparisons between two groups, statistical significance was assessed using the Mann-Whitney U test. For evaluation of the significance of differences across multiple groups, the Kruskal-Wallis test was employed. The results of these tests were presented as means and standard deviations. Results with $p < 0.05$ were considered statistically significant.

Results

Socio-demographic factors and propensity for aggressive behaviours (BPAQ)

In the study, gender was found to significantly influence the propensity for physical aggression among patients, with men displaying higher levels ($p = 0.0003$). Neither age nor place of residence

showed a significant impact on aggressive tendencies. Physical aggression varied by education level, being highest among individuals with primary education and lowest among those with higher education ($p = 0.0005$). Verbal aggression was lowest among married individuals and higher among those who were single, widowed, or categorised as “other”. Physical aggression was marginally higher among unemployed patients compared to other groups ($\bar{x} = 33.5$ points, approximately 6–7 points higher than in other groups). This difference approached statistical significance ($p = 0.0823$) (Table 1). Higher levels of aggression across most measures were observed in patients with longer hospital stays (physical aggression – $\bar{x} = 28.8$, verbal aggression – $\bar{x} = 48.8$; anger – $\bar{x} = 39.1$; hostility $\bar{x} = 43.1$) (Table 1).

Socio-demographic factors and emotion suppression skills (CECS)

Gender influenced the ability to suppress anxiety ($p = 0.0067$) and, to a lesser extent, anger ($p = 0.0621$), with men exhibiting this psychometric profile more strongly. Men were generally better at suppressing negative emotions than women, with average anxiety suppression scores of 19.0 points for men compared to 17.9 for women, and anger suppression scores of 18.5 compared to 17.7, respectively. Age did not significantly differentiate the ability to suppress negative emotions, except in the case of depression, where the difference approached statistical significance ($p = 0.0882$). Place of residence did not have a statistically significant effect on CECS measures.

Education level influenced the ability to suppress anger, as well as overall control of negative emotions ($p = 0.0290^*$). Higher values of the CECS measure of anger were observed in those with lower education, i.e. the patients were more likely to suppress their anger. Marital status only affected the suppression of depression, with differences approaching statistical significance ($p = 0.0654$). Those in the “other” category (divorced or separated) had the lowest depression suppression scores ($\bar{x} = 16.8$; $s = 4.1$), while widowed individuals had the highest scores ($\bar{x} = 19.1$; $s = 3.9$).

Occupational status significantly influenced the ability to suppress negative emotions across nearly all CECS measures, including depression suppression ($p = 0.0150$), anxiety suppression ($p = 0.0479$), and overall emotional control ($p = 0.0114$). Retirees and pensioners showed greater resilience to negative emotions, while younger individuals – both employed and unemployed – were more likely to express them.

The final analysis examined the relationship between the duration of hospital stay and the ability to suppress negative emotions. No statistically significant relationships were found, indicating that the length of hospital stay did not influence CECS measures of emotional suppression (Table 2).

Table 1. Psychometric BPAQ measures for socio-demographic differences in physical aggression, verbal aggression, anger, and hostility as reported by patients

Parameter	Physical aggression		Verbal aggression		Anger		Hostility	
	Mean value	SD	Mean value	SD	Mean value	SD	Mean value	SD
Gender								
Female	24.0	15.2	45.1	18.6	37.3	17.9	41.7	16.0
Male	29.4	17.7	45.4	18.2	39.1	19.6	43.6	16.8
<i>P</i> -value	0.0003***		0.7890		0.2556		0.2591	
Age [years]								
18–29	26.6	17.6	46.5	18.4	40.0	19.6	44.1	18.0
30–39	27.1	15.8	45.5	17.5	38.3	17.5	43.0	15.7
40–49	25.2	14.6	44.5	18.9	35.8	18.2	41.9	15.1
50–59	26.7	16.8	46.4	19.0	38.8	19.9	44.3	15.1
> 60	26.3	17.3	44.1	18.4	37.3	18.1	40.9	17.3
<i>P</i> -value	0.9391		0.7870		0.4407		0.3496	
Place of residence								
Village	27.5	17.4	43.8	19.0	37.5	19.5	43.0	16.5
City	25.0	15.7	46.3	17.8	38.5	17.7	42.0	16.3
<i>P</i> -value	0.1010		0.1633		0.4733		0.3908	
Education								
Primary	33.9	20.6	44.4	18.1	43.3	20.8	41.7	16.4
Vocational	28.2	15.5	46.7	20.0	37.7	17.2	44.4	15.9
Secondary	26.7	17.2	45.1	18.7	38.2	19.3	43.0	16.9
Higher	22.6	14.5	44.3	17.0	36.7	18.2	40.7	16.2
<i>P</i> -value	0.0005***		0.5714		0.2711		0.3907	
Marital status								
Single	28.3	17.9	47.2	17.3	38.0	19.3	43.1	16.5
Married	25.4	15.1	43.6	18.4	37.4	18.1	41.8	16.5
Widower/widow	26.2	19.6	48.1	18.5	43.5	20.9	45.9	15.1
Other	30.5	20.3	53.4	18.9	40.8	17.1	44.6	15.4
<i>P</i> -value	0.3445		0.0206*		0.2494		0.5178	
Professional status								
Employed	25.4	15.1	45.7	17.9	38.0	18.7	43.4	16.2
Unemployed	33.5	21.2	47.7	17.8	39.8	19.4	41.9	15.7
Disability pension	26.9	16.9	44.5	23.8	38.9	19.4	45.1	17.5
Retirement	25.8	17.0	44.0	18.1	37.3	17.8	40.1	17.0
<i>P</i> -value	0.0823		0.0150*		0.0479*		0.0114*	
Length of hospital stay								
2–3 days	26.6	17.3	45.2	17.3	38.8	18.5	42.6	17.2
4–5 days	25.6	14.9	44.3	19.3	36.9	18.7	42.5	14.9
Over 5 days	28.8	17.8	48.8	18.8	39.1	18.8	43.1	16.7
<i>P</i> -value	0.3603		0.1460		0.4874		0.9146	

SD – standard deviation; p – probability value calculated using the Mann-Whitney U test (differences for two independent groups) or Kruskal-Wallis test (used to determine differences between independent groups); *statistical significance: *p < 0.05; **p < 0.01; ***p < 0.001.

Table 2. Psychometric CECS measures for socio-demographic differences in the suppression of anger, depression, and anxiety as reported by patients

Parameter	Anger suppression		Depression suppression		Anxiety suppression		Overall emotional control	
	Mean value	SD	Mean value	SD	Mean value	SD	Mean value	SD
Gender								
Female	17.7	4.8	18.3	4.0	17.9	4.3	54.0	10.8
Male	18.5	4.8	18.2	4.3	19.0	4.4	55.7	11.7
P-value	0.0621		0.9317		0.0067**		0.1276	
Age [years]								
18–29	17.4	5.4	17.8	4.5	18.5	4.9	53.6	12.8
30–39	17.6	4.6	17.6	4.1	18.2	4.4	53.3	11.0
40–49	18.5	4.9	19.1	4.1	18.5	3.8	56.1	10.6
50–59	18.2	4.8	18.0	4.2	18.3	4.6	54.6	11.9
> 60	18.7	4.5	18.6	4.0	18.7	4.1	56.0	10.4
P-value	0.2114		0.0882		0.8793		0.2796	
Place of residence								
Village	18.4	4.7	18.5	4.1	18.6	4.4	55.5	11.3
City	17.9	4.9	18.0	4.2	18.4	4.3	54.3	11.3
P-value	0.1328		0.1598		0.4558		0.0945	
Education								
Primary	18.5	3.9	19.1	4.1	19.2	3.8	56.8	9.9
Vocational	18.8	4.6	18.0	4.1	18.5	4.1	55.2	11.2
Secondary	18.2	5.0	18.6	4.2	18.7	4.6	55.5	11.5
Higher	17.5	4.9	17.7	4.1	17.9	4.3	53.1	11.2
P-value	0.0711		0.1167		0.3376		0.0290*	
Marital status								
Single	17.5	5.0	17.9	4.1	18.3	4.6	53.7	11.7
Married	18.2	4.7	18.3	4.2	18.5	4.2	55.0	11.0
Widower/widow	19.3	5.2	19.1	3.9	18.4	4.5	56.8	12.2
Other	17.5	4.1	16.8	4.1	17.7	4.8	51.9	11.6
P-value	0.1973		0.0654		0.7983		0.2934	
Professional status								
Employed	17.7	4.8	17.8	4.3	18.1	4.3	53.6	11.5
Unemployed	17.3	5.1	17.7	3.8	18.1	4.8	53.1	12.1
Disability pension	18.7	5.4	18.9	4.0	19.9	4.8	57.5	11.4
Retirement	18.7	4.4	18.9	3.9	18.8	4.1	56.5	10.2
P-value	0.0823		0.0150*		0.0479*		0.0114*	
Length of hospital stay								
2–3 days	18.0	4.9	18.0	4.0	18.2	4.4	54.2	11.3
4–5 days	18.1	4.7	18.3	4.2	18.4	4.3	54.9	11.2
Over 5 days	18.5	4.6	18.3	4.2	19.3	3.8	56.1	10.5
P-value	0.6604		0.7176		0.1748		0.5327	

SD – standard deviation; p – probability value calculated using the Mann-Whitney U test (differences for two independent groups) or the Kruskal-Wallis test (used to determine differences between independent groups); *statistical significance: *p < 0.05; **p < 0.01; ***p < 0.001.

Socio-demographic factors and the psychometric profile of nurses

The impact of selected socio-demographic factors on the ability to suppress negative emotions, measured using the CECS questionnaire, was analysed. The highest level of anger suppression was observed among nurses aged 40–49 years, while the lowest was

found among those aged 18–29 years. The influence of age on this CECS measure was notable ($p = 0.0574$). Variations in anxiety suppression levels were also present ($p = 0.0864$). Nurses with 16–20 years of professional experience were the most effective at suppressing negative emotions in the form of anger. Differences in anger suppression levels based on years of service approached statistical significance ($p = 0.0675$)

Table 3. Psychometric CECS measures for socio-demographic differences in the suppression of anger, depression, and anxiety as reported by nurses

Parameter	Anger suppression		Depression suppression		Anxiety suppression		Overall emotional control	
	Mean value	SD	Mean value	SD	Mean value	SD	Mean value	SD
Age [years]								
18-29	17.5	4.6	17.4	4.1	17.0	4.9	51.9	12.5
30-39	18.2	4.2	18.3	3.1	16.4	3.1	52.9	8.1
40-49	19.5	4.5	18.4	3.9	18.1	4.0	56.0	10.0
> 50	18.3	4.7	18.0	3.7	17.0	4.5	53.2	10.9
<i>P</i> -value	0.0574		0.3540		0.0864		0.1387	
Place of residence								
Village	18.2	4.6	17.6	3.2	16.7	3.8	52.5	9.5
City	18.5	4.6	18.4	4.2	17.5	4.6	54.4	11.6
<i>P</i> -value	0.6418		0.0587		0.2424		0.2509	
Education								
Medical high school	18.5	5.0	18.0	3.4	17.0	4.3	53.5	10.5
Medical vocational college	18.6	4.4	18.5	3.8	17.3	5.0	54.4	11.7
Bachelor's degree in nursing	18.3	4.5	18.2	3.9	17.4	4.0	53.9	10.6
Master's degree in nursing	18.3	4.4	17.6	3.6	16.7	4.2	52.6	10.2
<i>P</i> -value	0.9722		0.6158		0.7503		0.7804	
Marital status								
Single	17.6	4.7	17.4	3.7	16.9	4.8	51.9	12.0
Married	18.6	4.5	18.1	3.7	17.1	4.1	53.8	10.3
Other	19.2	4.8	18.9	4.4	18.5	4.8	56.6	11.4
<i>P</i> -value	0.2602		0.2237		0.5327		0.2382	
Years of professional experience								
1–5	17.5	4.7	17.2	3.9	17.0	4.8	51.7	12.6
6–10	18.8	4.7	18.8	3.4	17.2	4.0	54.9	10.5
11–15	18.2	4.3	18.0	3.6	17.2	2.5	53.4	8.4
16–20	19.9	4.3	18.1	3.8	16.6	5.0	54.7	10.6
21–25	16.7	4.6	17.2	4.6	16.6	3.2	50.4	10.4
26–30	19.2	4.2	18.2	3.9	17.2	4.4	54.6	10.5
> 30	18.3	4.9	18.4	3.2	17.4	4.8	54.1	10.8
<i>P</i> -value	0.0675		0.2372		0.9036		0.4965	

SD – standard deviation; p – probability value calculated using the Mann-Whitney U test (differences for two independent groups) or the Kruskal-Wallis test (used to determine differences between independent groups); *statistical significance: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4. Psychometric CECS measures for differences in the suppression of anger, depression, and anxiety related to additional qualifications as reported by nurses

Possession of additional qualifications	CECS					
	Anger suppression		Depression suppression		Anxiety suppression	
	Point-biserial correlation coefficient	P-value	Point-biserial correlation coefficient	P-value	Point-biserial correlation coefficient	P-value
Specialist course	0.00	0.9689	-0.03	0.5708	0.01	0.8171
Qualification course	-0.04	0.4823	0.01	0.8447	0.03	0.6197
Specialization	0.07	0.2059	0.16	0.0049**	0.01	0.8626
Continuing education course	-0.05	0.4101	-0.18	0.0017**	0.00	0.9865
None	0.01	0.8069	0.00	0.9613	0.01	0.8152
						0.8573

*Statistically significant. A negative correlation coefficient indicates that individuals who are exposed to these forms of aggression exhibit lower levels of emotional suppression.

(Table 3). Possession of additional qualifications was associated with the ability to suppress negative emotions. Two exceptions were identified: the correlation between depression suppression levels and having specialisations or completing continuing education courses. Nurses who had completed additional training courses showed a lower level of depression suppression. However, those with specialisation showed a higher level of depression suppression (Table 4).

Discussion

To the best of our knowledge, this is the first study assessing the impact of socio-demographic factors on the occurrence of aggressive behaviours among patients and nurses. The study aimed to evaluate the influence of socio-demographic factors on the propensity for aggressive behaviours in these groups. Analysis of the data revealed that, according to the BPAQ, gender significantly differentiated the tendency for physical aggression, with men scoring higher. Men also demonstrated greater emotional suppression compared to women. This suggests that prolonged suppression of emotions may increase the risk of physical aggression. According to Konopka *et al.*, gender influences how aggression manifests; men tend to exhibit physical aggression, while women are more likely to display relational and indirect aggression [12]. Aranowska *et al.* found that young men were more behaviourally aggressive than young women, showing higher levels of physical aggression, verbal aggression, and hostility [6]. Similarly, Bozzini *et al.* noted differences in aggression levels between male and female university students, with men being more prone to physical aggression and anger [13]. However, Lickiewicz *et al.* presented contrasting findings, suggesting that women more frequently display aggressive behaviours [14]. Our study also found that patients aged 40–49 years demonstrated a higher level of depression suppression, as measured by CECS. Among nurses, anger suppression was highest in the 40–49-year-old age group and lowest in the 18–29-year-old age group. The impact of age on CECS measures of anger among nurses was clear and nearly statistically significant ($p = 0.0574$). These results align with findings by Juczyński *et al.*, who noted that emotional control (of anxiety, depression, and anger) increases with age. They suggested that life experiences gained over time make it easier to make decisions about treatment [15]. Llewellyn *et al.* argued that suppressing negative emotions provides only temporary relief. Long-term suppression of emotions is harmful and may lead to an increase in aggressive behaviours [16]. Research by Wieder-Huszla *et al.* showed the lowest levels of depersonalisation among younger individuals and those with the shortest professional experience [17]. Our study found that nurses with 16–20 years of professional experience were the most effective at suppressing negative emotions. According

to Dziąbek *et al.*, longer professional experience among nurses contributes to a decrease in job satisfaction [18]. Our findings also showed that educational level influenced the occurrence of physical aggression according to the BPAQ among patients. Higher levels of aggression were observed among individuals with primary education, while the lowest levels were found among those with higher education. Analysis of the results indicated that individuals with lower education levels had higher CECS scores, meaning they suppressed negative emotions more. Nurses who had completed additional training courses showed a lower level of depression suppression ($p = 0.0049$). However, those with specialisation showed a higher level of depression suppression ($p = 0.0017$). According to Orzechowska *et al.*, family circumstances and socioeconomic status are linked to how individuals cope with stress and their tendencies toward aggressive behaviours [5]. Park *et al.* found that low social status (education level, employment status) influences the expression of anger. They also noted that individuals with low income and younger men exhibited higher levels of anger [19, 20]. In our study, verbal aggression was lowest among married patients and higher among those who were single, widowed, or in the “other” category. Physical aggression was slightly higher among unemployed patients, with an average score of 33.5 points, about 6–7 points higher than in other groups. According to Kendler *et al.*, marriage protects against violent acts, such as criminal recidivism or suicide [21]. Our study also found that occupational status influenced the ability to suppress depression for almost all CECS measures (except anger suppression). Retirees and pensioners were more resilient to negative emotions, while younger individuals, both employed and unemployed, were more likely to express them. Marcysiak *et al.* observed that older individuals with longer professional experience had higher scores related to emotional exhaustion [22]. Scientific reports indicate that all healthcare workers experience aggressive behaviours, with nurses being the most exposed. Prolonged exposure to aggressive behaviours leads to burnout, physical and psychological injuries, and absenteeism. Workplace violence also increased recruitment costs, as about 2% of employees left their jobs due to such violence [23, 24]. Juczyński suggested that individuals who rigidly follow social norms and are highly socialised tend to suppress emotions. Suppressed emotions, especially anger and frustration, negatively affect the human body and contribute to neurotic disorders or psychosomatic diseases [15]. According to Dudziak *et al.*, anger can arise from an insult, an obstacle, frustration, or unfair treatment. It can also be associated with destructive behaviour, rage, aggression, or anger [25]. Our study showed that age influenced anger suppression among nurses ($p = 0.0574$), with those having 16–20 years of professional experience being the most effective at suppressing negative emotions. According to Czerwona

et al., salary is a marker of professional recognition, prestige, and position. The nursing profession has become more professionalised over the years, requiring greater knowledge, qualifications, and responsibility. However, the lack of clearly defined competencies for nurses with higher qualifications, education, or specialisations can lead to frustration [26]. Low salaries, limited career opportunities, a lack of clear and organised competencies, and low professional prestige cause dissatisfaction and frustration, which also impact personal lives [27]. Gawęda *et al.* found that nurses in Poland expressed greater dissatisfaction with their jobs compared to nurses in other EU countries [28]. Nurses were also more likely than other women to believe they had achieved nothing in their profession and to feel frustrated with their lives [29].

Several research limitations must be considered when interpreting the results. This study was conducted only in Rzeszów. Additionally, the study cannot be compared with other research because, to the best of our knowledge, no similar studies have been conducted. It is essential to carry out studies in other facilities and on a larger scale to thoroughly analyse and verify these findings.

Conclusions

Men are more prone to physical aggression and better at suppressing negative emotions than women. Nurses aged 40–49 years are the most effective at suppressing negative emotions. Longer professional experience correlates with greater emotional suppression. Individuals with lower education levels are more prone to physical aggression and suppress negative emotions more. Specialisation among nurses has an “antidepressant” effect, while continuing education courses may contribute to depression. To sum up, socio-demographic factors influence verbal and physical aggression, anger, hostility, and the suppression of negative emotions among patients and nurses. This may contribute to the increased prevalence of aggressive behaviours in healthcare facilities. Further studies on larger groups are necessary to estimate the scale of the problem and implement appropriate preventive measures, such as ensuring adequate psychological and therapeutic support. These actions could help reduce the incidence of mental disorders and chronic illnesses.

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Ethical approval

On 14 February 2019, the Bioethics Committee at the University of Rzeszów issued a positive opinion (No. 27/02/2019).

Conflict of interest

The authors declare no conflict of interest.

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