

REVIEW

ANALYSIS OF THE MAVAS INSTRUMENT TO ASSESS THE MANAGEMENT OF
PATIENT AGGRESSION

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Received June 16, 2014
Accepted August 13, 2014

Abstract

Aim: Patient aggression is an integral part of the current clinical nursing practice, and thus it calls for implementation of various strategies to manage it. The Management of Aggression and Violence Attitude Scale (MAVAS) is a research tool developed to assess the attitudes of staff and patients regarding strategies used to manage patient aggression. Its usage is underpinned by an assumption that attitudes and beliefs of the staff towards patient aggression influence the choice of particular management strategies they adopt in clinical practice. The aim of the paper was to analyze the use of the MAVAS instrument in research studies so that its Slovak language version could be prepared and the tool could be implemented for the first time in the context of clinical nursing practice in Slovakia. **Design:** The paper presents a review study. **Methods:** A systematic review of research studies using the MAVAS was performed by the scientific and research search portal Scientia.sk in the form of expert search focused on licensed full text resources published in the years 2002-2014. **Results:** From a basic sample of 39 resources selected, only 10 satisfied the inclusion criteria. Validity and reliability of the MAVAS was confirmed in all of them if specified. The instrument is applicable to be used in comparative research studies conducted in different contexts, settings, countries and populations. **Conclusion:** The analysis of using the MAVAS in research studies has proved its applicability in practice to identify the attitudes of staff and patients towards patient aggression and its management.

Keywords: patient aggression, management of patient aggression, attitude scales, MAVAS.

Introduction

Aggression and violence¹ against nurses, when performing their job, is an integral component of current clinical nursing practice. Nurses are the most risky group when compared with other health care professionals (Jackson et al., 2002, p. 13). Aggression against nurses has become more often the issue of interest of many research studies (e.g. Farrell, 1999, pp. 532-541; Nabb, 2000, pp. 36-38; Saverimuttu, Lowe, 2000, pp. 33-36; Taylor, 2000, pp. 39-41; Szkanderová, Jarošová, 2008, pp. 1-9; Lepiešová, Nemčková, 2013, pp. 172-194) focused on identification of its occurrence, risks and consequences, explanation of causative and contributory factors, attitudes analysis of the persons involved, evaluation of effectiveness of

administrative and technical measures, and clinical guidelines applied in order to reduce the incidence of aggression incidents and to manage them. The patients are the most frequently declared perpetrators of aggression against nurses (Jackson et al., 2002, p. 15; Lepiešová et al., 2008, p. 234). According to Wells and Bowers (2002, p. 231), patient aggression against nurses is not a new phenomenon; there has always been a potential or current risk of it when performing nurses' job. What has been changing recently is the escalation of attention towards this issue. There is also a significant appeal to assessment of current clinical practice including patient aggression management (Duxbury, 2003, p. 40). It results in extensive research focused on various aspects of the issue.

The Management of Aggression and Violence Scale (MAVAS) by Joy Duxbury is a self-reference scale of 27 items developed to assess the attitudes of staff and patients to different strategies of aggression

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management applied in current clinical practice. A range of various methods and strategies to deal with and manage patient aggression is available to staff. The choice of particular methods they adopt can be related to their attitudes and beliefs regarding patient aggression including their perception and understanding the causes of aggressive behavior (Pulsford et al., 2013, p. 297).

Generally, approaches to deal with the problem of patient aggression may be split into two groups. The traditional restrictive approach is oriented to control and dominate the aggressive patient. Management of patient aggression in this approach is referred to as being reactive, that is, interventions are implemented as a response to the presentation of patient aggression. Physical methods are used, such as tranquillizing medications, control and restraint techniques (the use of limb restraints, or physical predominance), and seclusion (Pulsford et al., 2013, p. 297). The traditional approach is underpinned by the biomedical way of understanding patient aggression, which, in terms of causative and underlying factors of aggression, particularly emphasizes the internal characteristics and individual patient variables, such as psychopathological changes.

On the other hand, an interpersonal approach to aggression management is focused on the use of non-restrictive interventions, not only in a reactive way but also as preventive measures at the time when the patient is not aggressive. This approach stresses non-physical methods and strategies of dealing with patients' aggressive behavior, such as effective communication, anger management, and de-escalation by verbal and nonverbal techniques (Duxbury, 2002, p. 328; Pulsford et al., 2013, p. 297). This approach is linked to the perception of patient aggression as the result of a combination of several contributory factors, that is, in addition to internal factors, the interaction of external and situational/interactional factors is recognized.

The MAVAS is focused on the perspectives of staff and patients on patient aggression in terms of how they interpret the causes of aggressive behavior of the patients and its management. Distinction between the views of staff and patients about this subject may be common as it is evidenced by the research studies applying the MAVAS. Staff attributes patient aggression particularly to individual patient variables and at the same time agrees more with traditional strategies of aggression management. Patients, conversely, believe that various situations and interactions with the environment or the staff underpin their aggressive behavior, and therefore

emphasize the importance of non-restrictive interventions in management of aggression.

The scale construction was based on escalating concerns and discussions about patient aggression against staff; tending the research in this field to be oriented to collect data about the incidents and examine them retrospectively; missing the research tool to specifically examine views on the strategies to manage patient aggression; missing the tool exploring not only staff attitudes but also patients' perspectives on the management of their aggressive behavior (Duxbury, 2003, pp. 39-42). When constructing the MAVAS items, the author built on the findings of a qualitative research study applying the critical incident technique to collect the data about patient aggression against nurses, which was oriented towards mental health, medical, and surgical nurses (Duxbury, 1999, p. 110). The piloting and the first use of the MAVAS by the author was conducted on an acute mental health unit on a sample of nursing and medical staff and in-patients. The factor analysis confirmed the construct validity of the MAVAS and its reliability in terms of internal consistency with four factors identified, with overall loading of factors ≥ 0.8 . The reliability of the MAVAS was assessed also from the aspect of its stability in the course of time (repeatability) using a test-retest, resulting in Pearson's r correlation coefficient of 0.89 confirming its reliability for 89 % (Duxbury, 2002, p. 330; Duxbury, 2003, pp. 48-51). The psychometric properties of the MAVAS demonstrate its applicability in research studies to determine attitudes regarding the management of patient aggression.

The MAVAS contains 27 items in the form of statements about patient aggression and its management. The items represent 4 themes/factors confirmed by the factor analysis reflecting 3 explanatory models of the causes of aggression (internal, external and situational/interactional model) and specific views about the management of patient aggression (Duxbury, 2002, p. 330; Duxbury, 2003, p. 47). The respondents are asked to comment on the particular statements by visual analogue scale (VAS) by marking a point on the line which represents the extent to which they agree, or disagree with the statement. The VAS is presented in the form of 100 mm long straight line, with responses "strongly agree" at the beginning of the VAS (0 mm) and "strongly disagree" at the end (100 mm). The MAVAS statements are presented to the respondents in a random order, that is, they are not ordered in the sequence of particular subscales according to the themes. Duxbury (2003, p. 43) argues that this random order is an attempt to reduce the risk of a response set bias.

Aim

The aim of the paper is to analyze the use of the MAVAS instrument in research studies performed abroad.

Methods

During the initial phase of the review study, a systematic search for relevant sources about research studies using the MAVAS as a data collection tool was conducted in the available electronic databases.

Eligibility criteria

Within the searching strategy, the following keywords were chosen: aggression, violence, MAVAS, Duxbury. The truncation symbol * was added to the roots aggress* (aggression, aggressive, aggressiveness, aggressively) and violen* (violence, violent) and the Boolean operators OR and AND (aggress* OR violen* AND MAVAS AND Duxbury) were used. Searching for the sources was not limited by language, time aspect or study design.

Sources

The systematic search was done via the searching portal for science and research Scientia.sk in the form of an expert search oriented to the licensed fulltext sources. The group contains 30 sources which cover, for example, Academic Search Complete (EBSCO), JSTOR, Humanities International Complete (EBSCO), MEDLINE with FullText (EBSCO), Oxford Journals (Oxford University Press), ProQuest Central, ScienceDirect (Elsevier), SpringerLink, and Wiley Online Library Journals.

Search

The search strategy chosen detected 43 documents, out of which 39 could be downloaded to perform further selection. From this set of data, a total of 29 sources were excluded – 7 articles were duplicate findings of relevant research studies applying the MAVAS, 1 article was written in Dutch, 2 articles were not available online, and 19 of them were either theoretical in their nature or presented research concerning the problem but without using the MAVAS. The rest of the articles were added to the review study based on the following inclusion criteria: a fulltext version of the paper, the MAVAS by Duxbury applied as a research tool for data collection, description of the research sample, description of the instrument (subscales, methodology or psychometric properties), and recommendations for using the instrument.

Study selection and data analysis

Out of the set of 39 identified studies, 10 articles met the above criteria. These were further analyzed by the content analysis detecting the following variables: the author and the year of the study, design and methodology of the study, description of the MAVAS instrument (subscales, methodology of administration or adapted versions), psychometric properties of the MAVAS, setting of the study, research sample (number of respondents, features), findings and recommendations for the practice.

Results

The results of the content analysis of 10 studies, in which the attitudes towards the causes and the management of patient aggression was assessed by the MAVAS, are presented in Table 1.

Table 1 The MAVAS use in research studies

Author (year) Design and methodology of the study	Description of the MAVAS instrument	Testing the MAVAS – psychometric properties	Setting / research sample	Findings / recommendations
Duxbury J (2002) a pluralistic design, triangulated methodology of quantitative and qualitative methods: MAVAS, critical analysis of reported incidents - MSOAS, semi-structured interviews	MAVAS – 4 themes (4 factors by FA), number of statements not specified: 1. situational perspective 2. external perspective 3. internal perspective 4. views about management approaches VAS used 0-100 mm long (0 = strongly agree, 100 = strongly disagree)	reliability confirmed (test-retest) – Pearson's r correlation coefficient 0.89 construct validity confirmed by FA – 4 factors identified (overall loading of factors ≥ 0.8), reflecting 3 explanatory models of the causation of patient aggression and attitudes about management approaches	UK – acute mental health unit patients (n = 80) nursing staff (n = 72) medical staff (n = 10)	significant distinctions identified – opposing views of patients and staff about both the problem of patient aggression and the aggression management the MAVAS suitable to determine attitudes of staff and patients

Duxbury J (2003) description of piloting and testing a new tool	MAVAS – 4 key themes (4 factors by FA), 27 statements: 1. interactional perspective 2. external perspective 3. internal perspective 4. views about approaches to manage aggression VAS used 0-100 mm long	reliability confirmed (test-retest) – Pearson's r correlation coefficient 0.89 construct validity confirmed by FA – 4 factors identified (overall loading of factors ≥ 0.8), problematic statements 14 and 18 content validity questioned	UK - acute mental health unit patients (n = 20) staff (n = 16)	FA recommended as a basis for the use of the MAVAS in further studies different approach used in administration of the MAVAS to staff (indirectly, by postal route) and patients (directly, on an individual basis) applicability of the MAVAS confirmed following minor operational refinements
Duxbury J, Whittington R (2005) a survey design MAVAS + follow-up semi-structured interviews	MAVAS – 4 factors, 27 statements: 1. internal factors 2. external factors 3. situational/interactional factors 4. management factors VAS used 0-100 mm long (0 = strongly agree, 100 = strongly disagree) different approaches used in administration of the MAVAS to staff and patients	reliability confirmed (test-retest) – Pearson's r correlation coefficient 0.86	UK - acute mental health wards patients (n = 82) nurses (n = 80)	opposing views of patients and staff about the reasons for aggression and its management identified study limitations declared the MAVAS evaluated to be an effective research tool for the structured collection of empirical data further psychometric testing of the MAVAS recommended
Hahn S et al. (2006) quasi-experimental pre-test and post-test study intervention: 5-day lasting aggression management training program MAVAS as a data collection instrument used within: pre-test (1 week prior to the intervention) post-test (3 months post intervention)	German version of the MAVAS – linguistic validation 4 dimensions, 27 statements: 1. internal model 2. external model 3. situational/interactional model 4. management approach ordinal scale derived by transforming the data from VAS: 0-40 mm = agree; 41-60 mm = indecisive; 61-100 mm = disagree	poor internal consistency of the German version of the MAVAS (Cronbach's $\alpha - \alpha_c$): 1. internal model; $\alpha_c = 0.54$ 2. external model; $\alpha_c = 0.41$ 3. situational/interactional model; $\alpha_c = 0.25$ 4. management approach; $\alpha_c = 0.71$ external validity of the MAVAS not established	CH - acute psychiatric wards nurses (n = 63)	stable adherence of nurses' attitudes to the 3 causative models and current aggression management approaches proved sensitivity of the MAVAS to detect the change of attitude questioned study limitations declared; limitations of the VAS use – risk of the tendency to respond in a middle category of scale + focus only on the cognitive component of attitude; further psychometric testing of the German version of the MAVAS recommended
Duxbury J et al. (2008) retrospective cross-national study comparing findings of 2 previous studies using the MAVAS, in UK (Duxbury, Whittington, 2005) and CH (Hahn et al., 2006)	English / German version of the MAVAS 4 factors/themes, 27 statements: 1. internal causative factors (4,5,7,9,14) 2. external causative factors (1,16,27) 3. situational/interactional causative factors (2,3,6,20,23) 4. management of aggression (general management –	not described	UK / CH – acute psychiatric in-patient units UK nursing staff (n = 75) CH nursing staff (n = 75)	both commonalities and differences identified between the attitudes of nursing staff of the two European countries the MAVAS concluded to have a potential to be used for comparative studies in different countries and varied clinical areas limitations of a retrospective comparison declared

	8,21; use of medication – 13,22,25; use of seclusion – 10,12,24; restraint – 11,18; non-physical methods – 15,17,19,26)			
Stubbs B et al. (2011) retrospective survey MAVAS + 2 specific questions added (personal experience with patient aggression; self-confidence / feeling of being adequately prepared to deal with incident)	MAVAS – 4 models, 27 statements: 1. internal model 2. external model 3. situational/interactional model 4. management of aggression model	not specified	UK – university final year physiotherapy students (n = 64)	no significant differences found between victims' and non-victims' views of statements call for including the issue (causes, early detection, prevention, and management of patient aggression) to physiotherapy study program before students start their first clinical placement study limitations declared
Pulsford D et al. (2013) a survey design MAVAS-L + 3 specific statements added (reflecting particular concerns in study setting)	MAVAS-L (adapted version MAVAS-Likert) – 4 factors, 27 statements: 1. internal factors 2. external factors 3. situational/interactional factors 4. management of aggression VAS replaced with a 5-point Likert scale (from 1 = strongly disagree, to 5 = strongly agree); in analysis 1.00-2.89 = disagree; 2.90-3.10 = unsure; 3.11-5.00 = agree	not specified	UK – a high secure hospital for men nursing staff (n = 109) patients (n = 26)	considerable concordance between staff and patients in their responses (opposed views on only 2 of the 30 items) adapted version MAVAS-L recommended for patients with severe mental disorder (less complicated than VAS)
Dickens G et al. (2013) a prospective, cross-sectional comparative survey design MAVAS OAS-MNR interview validation study (to verify validity and factor structure of the MAVAS in a new setting / a new population)	MAVAS - 4 factors, 27 statements: 1. internal causes 2. external causes 3. situational/interactional causes 4. issues of aggression management VAS used 0-100 mm long (0 = strongly agree, 100 = strongly disagree)	original factor structure refuted by confirmatory FA restructured MAVAS – 3 themes (3 factors by FA), 14 statements: 1. modifiability of aggression 2. “hands on” management (e.g. medication, physical methods) 3. “hands off” management (e.g. de-escalation, no intervention) restructured MAVAS – overall reliability in terms of internal consistency acceptable	UK – a forensic mental health service (low and medium secure wards) patients (n = 98) nursing staff – nurses, health-care assistants (n = 72)	less significant differences between the views of patients and staff when compared with previous studies (2005, 2008) different views of forensic patients when compared with previously reported patients in common mental health services original factor structure of the MAVAS not applicable universally in every context further examination of the MAVAS in a different context recommended using of restructured MAVAS in further studies not recommended by the authors due to numerous limitations
Gerditz MF et al. (2013) pre-test and post-test study	modified MAVAS – 4 subscales, 23 items (exclusion of 4 items not relevant to the ED – items regarding seclusion): 1. the environment (3	not specified	AUS – 18 emergency departments (EDs) nursing staff – nurses or midwives (n = 471)	limited evidence that the educational program significantly modified attitudes within post-test measurement, a statistically significant

a mixed methods approach intervention: 45 min. educational program about prevention of patient aggression MAVAS as a data collection instrument used within: pre-test (immediately prior to intervention) post-test (6-8 weeks after training) + individual interview with key stakeholders: nurse unit managers, trainers (perception of MOCA-REDI program)	items) 2. the situation (4 items) 3. the patient (5 items) 4. management strategies (11 items) VAS used 0-100 mm long (0 = strongly agree, 100 = strongly disagree); in analysis ordinal scale derived: 0-20 mm = strongly agree; 21-40 mm = agree; 41-60 mm = undecided; 61-80 mm = disagree; 81-100 mm = strongly disagree			attitudinal change showed in one-fifth of the items tested on the MAVAS particularly concerning the causative factors of aggression stable adherence confirmed as for the uncertainty in relation to use of physical restraint and the need for intervention when aggression is expressed in the ED study limitations declared the need to develop tools to measure the impact of educational programs designed to prevent and manage patient aggression in the practice
Dawood E (2013) comparative, descriptive cross-sectional study MAVAS	Arabic version of the MAVAS – linguistic validation 4 categories, 27 items: 1. internal factors 2. external factors 3. situational factors 4. management factors a dichotomous evaluation on a question-by-question basis (agree/disagree)	not specified	EGY, SA – psychiatric mental health hospitals EGY nurses (n = 65) SA nurses (n = 63)	results presented in the form of mean scores of the MAVAS categories and the total mean score of the MAVAS number of nurses who agree or disagree with the statement presented in each item

FA – factor analysis, VAS – visual analogue scale, ED – emergency departments, UK – United Kingdom, CH – Switzerland, AUS – Australia, EGY – Egypt, SA – Saudi Arabia, MAVAS – Management of Aggression and Violence Attitude Scale, MSOAS – Modified Staff Observation Aggression Scale, OAS-MNR – Overt Aggression Scale – Modified for Neurorehabilitation, MOCA-REDI – Management of Clinical Aggression – Rapid Emergency Department Intervention

Discussion

Application of the MAVAS is interpreted according to the variables observed. In terms of research study designs while applying the MAVAS, the most frequent were descriptive cross-sectional survey studies, both retrospective and prospective ones. Comparative nature can be noted in 3 of them – the authors (Duxbury et al., 2008, pp. 596-606; Dawood, 2013, pp. 166-175) compared two subsamples of respondents (in both cases nurses) in order to explore cultural dependence of their attitudes towards patient aggression or compared their findings with previous studies (Dickens et al., 2013, pp. 532-544).

The other two studies were pre-test and post-test studies (Hahn et al., 2006, pp. 197-204; Gerdtz et al., 2013, pp. 1434-1445). The MAVAS was used in these studies as a method of data collection before and after educational programs in order to detect

changes in attitude influenced by the intervention. In the case of the study by Hahn et al. (2006, pp. 197-204), the intervention was represented by a 5-day lasting aggression management training program using a method of problem-based learning to promote the acceptance of significant contribution of external and situational/interactional causative factors to aggressive behavior of the patient. By using the MAVAS, the stable adherence of nurses' attitudes to the 3 causative models and current approaches to manage patient aggression was confirmed. Therefore, the authors concluded problematic sensitivity of the MAVAS when detecting attitudinal changes, probably also as a result of too short duration of the training program to make a change of attitude. The study by Gerdtz et al. (2013, pp. 1434-1445) provided only limited evidence about the influence of the educational program on the change of attitude. Applicability of the MAVAS for detecting the change

of attitude in the pre-test and post-test studies is questionable, but the MAVAS was not originally constructed for this purpose.

In the published studies, the MAVAS was used either independently or within pluralistic or mixed method study designs as one of the methods of data collection (quantitative or qualitative – e.g. together with an interview, technique of the critical analysis of reported incidents, the tools MSOAS, or OAS-MNR).

The MAVAS was, with two exceptions (Stubbs et al., 2011, pp. 313-318; Gerdtz et al., 2013, pp. 1434-1445), used predominantly in the setting of mental health/psychiatric services. In patients with severe mental disorder, Pulsford et al. (2013, pp. 296-304) recommended its adapted version MAVAS-L, which is less complicated for patients than the original MAVAS using the VAS. The MAVAS can be applied also in other contexts and populations (e.g. students of physiotherapy or staff of emergency departments). However, it is important to think about its modified version, that is, to exclude the items irrelevant in terms of the research setting as it was done in the study by Gerdtz et al. (2013, pp. 1434-1445) – the items dealing with managing patient aggression by seclusion were excluded. The author (Duxbury, 2002, pp. 325-337) always recommends performing the factor analysis in the new setting/context in order to verify the construct validity of the MAVAS and its factor structure. According to her instructions, Dickens et al. (2013, pp. 532-544) conducted a validation study of the MAVAS application in the specific context of a forensic mental health service (with low and medium secure wards) in order to verify the validity and original factor structure of the MAVAS, which was not confirmed. Their study gives evidence that the original factor structure is not applicable universally in every context.

Except for the study by Gerdtz et al. (2013, pp. 1434-1445), the MAVAS is usually applied as a 27-item instrument. This design was used in various language versions (English, German, Arabic), and linguistic validation was always performed. The MAVAS items are categorized into 4 subscales reflecting 3 causative models of patient aggression and the management of aggression. The MAVAS is based on the author's argument that behavior and methods adopted by the staff to manage aggression are influenced by their attitude to it. In analysis of this variable it must be stated that in terms of items categorization within the particular subscale, the MAVAS is not uniformly presented and matching the items with the subscales by the authors of the studies is not equal. To assess

respondents' attitude, different ways of scoring are used as well, either through a VAS (VAS 0-100 mm, or VAS 1-100 mm; the lower the score, the stronger the agreement), or 5-point Likert scale from 1 to 5; the lower the score, the stronger the disagreement (Pulsford et al., 2013, pp. 296-304), or it is not stated at all (Dawood, 2013, pp. 166-175). The VAS is criticized by some authors because of the risk of tendency to respond in the middle (Hahn et al., 2006, pp. 197-204). In the studies by Hahn et al. (2006, pp. 197-204) and Gerdtz et al. (2013, pp. 1434-1445), an ordinal scale is derived from the original VAS, making the comparison of the results more complicated. Based on the MAVAS application, the respondents' attitudes are presented on a question-by-question basis in all studies analyzed, except for one (Dawood, 2013, pp. 166-175) in which the results are presented in the form of subscale mean scores or the total mean score of the MAVAS, which is considered inappropriate in inconsistent formulation of statements.

Based on the analysis of research studies (Duxbury, 2002, pp. 325-337; Duxbury, 2003, pp. 39-52), unclearness of the pilot sample can be noted. The research studies applying the MAVAS are primarily more focused on investigation of staff attitudes, especially nursing staff (i.e. nurses, midwives, health-care assistants), however, the author emphasizes effectiveness of this tool for structured data collection in the particular issue from a broader perspective, as it is evidenced in the subsample of patients in three studies (Duxbury 2002, pp. 325-337; Duxbury, 2003, pp. 39-52; Duxbury, Whittington, 2005, pp. 469-478) as well as in a sample of students, in this case students of physiotherapy (Stubbs et al., 2011, pp. 313-318). The authors of particular studies focused on various subsamples of respondents stated the differences (in many cases significant ones) as well as similarities in the views of nurses and patients. The patients incline more to the perception of external and situational/interactional factors as significantly contributing to patient aggression when compared with the nurses and, on the other hand, nurses attribute aggressive behavior of the patients mainly to internal factors of aggression development and prefer the use of controlling, restrictive approaches in aggression management.

Conclusion

In Slovakia, the issue of aggression against nurses is insufficiently reflected in the context of its research as well as performing nursing profession as such. When solving the problem of aggression against health care professionals, especially nurses, it is

important to pay attention to the management of patient aggression.

Using self-reference attitude scales focused on the issue of aggression management becomes more and more popular. The attitude scales are effective because they allow massive data collection about perception, attitudes, views, and experience of numbers of participants in relatively short time periods. They are an alternative approach to measuring and determination of the characteristics and features of the concepts which are subjective in their nature, such as aggression. They represent a possibility of assessment of this problem, especially when one wants to get information also about patients' perception of the problem (Duxbury, 2003, p. 41). Analysis of using the MAVAS in research studies confirmed its applicability in practice when mapping staff and patients' attitudes regarding patient aggression and its management.

The findings of the MAVAS application can serve as the basis to initiate educational and training programs for the staff focusing on different causes of patients' aggressive behavior and the strategies of its management. Differences in the perception of patient aggression between the staff and the patients identified by the MAVAS at the same time accentuate the demand that staff should accept the patients' views about causative and contributory factors of their aggression and implement interpersonal approaches of aggression management to a greater extent in clinical practice.

The construct validity of the scale is confirmed by the factor analysis identifying the four factors, which are statistically and conceptually significant. Reliability of the scale is confirmed from the aspect of its stability in the course of time (repeatability); its language mutations need further testing in the specific context/setting, as their reliability in terms of internal consistency is insufficient (Hahn et al., 2006, pp. 197-204) or not specified at all.

The MAVAS is considered to be an effective tool also for comparative research studies conducted in different contexts, settings, countries (when linguistic validation of language mutations is done) and populations. Prior to its use in a broader research study in the context of clinical practice in the Slovak Republic, the author of the original scale will be contacted and factor analysis of the Slovak version of the MAVAS (after linguistic validation) will be conducted based on her recommendations.

The paper is an outcome of the project VEGA no. 1/0217/13 Identification of occurrence and analysis of patients' aggression against nurses.

Ethical aspects and conflict of interest

All the references in the list were cited. The authors declare that the study does not have any conflict of interest.

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Notes

¹For the purpose of this article the concepts of aggression and violence are understood to be synonymous and interchangeable. According to Rippon (2000, p. 456), the original frequently used term aggression no longer engenders strong emotions that attract attention of the public or the authorities. Thus, the term violence is more and more used in the substitution of the term aggression.