Reliability and Validity of a Further Tested Appreciative Management Scale

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Background and Purpose: Managers need evidence-based methods to evaluate their management skills. To further test the appreciative management scale (AMS 1.0) to create a practical instrument to be used in evaluating appreciative management. **Methods:** For further testing, a new survey was conducted among social and healthcare managers ($n = 734$) in Finland. Confirmatory factor analysis (CFA) was used to assess the scale validity and Cronbach's alpha coefficients the internal consistency. **Results:** The validated AMS 2.0 scale includes 24 items. The values measuring validity and reliability were good, with an Rool Mean Square Error of Approximation (RMSEA) of 0.072, Average Variance Extracted (AVE) values between 0.532 and 0.634, and Composite Reliability (CR) values ranging between 0.850 and 0.914. The Cronbach's alpha of the whole scale was 0.944. **Conclusions:** AMS 2.0 is a reliable and valid means to measure appreciative management as proved by confirmatory factor analysis.

Keywords: appreciation; assessment; management; scale; validity; reliability

A review of the extant literature on evidence-based management was conducted. Calls for evidence-based management have been based mostly on conceptual arguments that it constitutes best practice, however there is not yet any empirical research that demonstrates its effectiveness. Evidence-based management has been proposed to include four specific elements which need to be evaluated: external evidence; stakeholder (e.g., employees) preferences and values; context, organizational actors, and circumstances; and practitioner experience and judgments (Briner et al., 2009 p.23). Thus, evidence-based management is not a rigid system but a family of approaches that supports decision-making (Briner et al., 2009). However, it has been found that managers do not use evidence taken from management research for making strategic decisions, although it has not been shown if this is a result of evidence it simply not being available (Kovner & Rundall, 2006). Managers should use all the data and information that is available to them

when planning and implementing decisions, and evidence stemming from research should play a role in the process (Arndt & Bigelow, 2009). An indication as to the need to promote the use of evidence may be seen in the strong use of evidence in medicine, education, and policing which has been made available online by cooperatives of researchers and practitioners (Rousseau & Mccarthy, 2007). Therefore, in order to evaluate managers' actions, reliable instruments are needed.

In this study, first-line health and social care managers are defined as those who manage the operational staff, meaning staff that work directly with patient care. The majority of managers were responsible for administration, budget and staff issues, and the daily operation of their departments. First-line nurse managers come from different educational backgrounds and have varying degrees of leadership work and experience.

The first version of the appreciative management scale (AMS 1.0) was developed using mixed methods and psychometric testing to promote appreciative management as a visible concept in healthcare organizations (Harmoinen et al., 2017). The scale included 83 items and was found to be promising for use in evaluating appreciative management. The purpose of this study was to further test and validate the AMS among first-line managers. The ultimate goal was to achieve a version that could be used in practice and research to evaluate managers' actions and offer support for their own progression.

CONCEPTUAL FRAMEWORK

Conceptually, "appreciative" or its synonym "respectful," may be taken as showing regard for every human being as a source of value, regardless of social, cultural, or political differences (Faulkner & Laschinger, 2007). A definition where respect can be perceived as the worth accorded to one person by one or more others, serves as a core concept because it can be applied to generalized and particularized issues of respect and self-respect, and also considered from the sender's or receiver's perspective (Rogers & Ashforth, 2017). Appreciative management is seen as being based on moral principles, where the appreciation of human dignity serves as the keystone and forms a core value of human welfare (Van Quaquebeke & Ecklof, 2010).

According to the definition, appreciative management is a process of systematic management, highlighting equality, appreciating know-how, and the promotion of well-being at work. A process of systematic management means that a manager is a goal oriented and involved their work. The concept of equality in this setting indicates an acknowledgment between management and workers, between workers, between cultures, and between sexes. The appreciation of know-how encompasses the managers' practical work, their directional skills, and the know-how that leads to the independence of staff. Lastly, the promotion of well-being at work encompasses maintaining a good work climate, taking care of occupational healthcare, and fostering healthy interactions between managers and workers in the work setting (Harmoinen et al., 2014).

Systematic Management

The traits of appreciative management (or a lack of them) can be seen in reforms which have taken place in healthcare. A study of reforms in the primary healthcare system in Australia showed that health managers face a process of on-going change. A lack of proper communication strategies throughout the system was seen in higher level managers.

Middle managers were the recipients of change, but they had a little influence on decisions taken centrally and had little time to implement adequate communications and engage with service-provider staff (Javanparast et al., 2018). In the change process seen in primary care in Canada, challenges were found in the collaboration between nurses and medical practitioners concerning equality, where medical practitioners adopted an attitude that they were the boss of a nurse. Problems were also seen in allocating tasks between medical practitioners and nurses, and tasks which were given to nurses did not make them feel appreciated or useful (Gilbert et al., 2016). Such knowledge about reform processes informs processes of change in healthcare organizations which are multidimensional, and new research is therefore needed about management issues like appreciative management.

Equality

Equality has been raised as an important issue among young students and nurses. In a study concerning management in the future, equality between the manager and staff, between workers, cultural equality, and equality between sexes were all highlighted as important issues (Harmoinen et al., 2014). However, realizing these issues presents a big challenge in a hospital world where problems and consequences caused by hierarchy still exist. In a study concerning the relationships between obstetric care staff and their managers (Chipeta et al., 2016), hierarchical structures were seen to lead to incidences of poor treatment, particularly among junior staff and new recruits. The interactions with managers included being treated harshly in front of colleagues and patients, or making staff feel that their work was not being appreciated. Overall, hierarchical interactions have not been seen to promote respect for the dignity of nurses in hospital settings (Sabatino et al., 2016)

Appreciation of Know-How

A previous survey (Harmoinen et al., 2015) concerning appreciative management in Finland offered two particular findings which are interesting in the context of nursing and healthcare today. The first was that appreciative management implemented by managers was evaluated less well by staff than by managers in healthcare organizations. The second was that appreciative management had a connection with a current intention to leave the work place among staff respondents, meaning that the lower the perception of appreciative management, the more likely there was an intention to leave the work place.

An interesting question is therefore how to improve workplace conditions and reduce the potential of staff leaving because of the management they experience. The views of staff and managers about management and appreciative management differ, and differences in perceptions of the work environment and quality of care exist between nurse managers and staff nurses, and links with their intentions to leave are shown in other studies. In a study entitled "Is my boss really listening to me?" (Lloyd et al., 2015), an interesting finding was that managers rated their listening skills distinctly better than employees. There was also a finding that a high negative affect correlated with increased emotional exhaustion, and explained the relationship between perceived supervisor listening and emotional exhaustion. Furthermore, voluntary turnover was also related to low perceived supervisor listening (Lloyd et al., 2015). Differences between the views of staff and managers regarding human resource (HR) management have also been found, and managers' perceptions of HR management were seen to be more positive than those of employees and coworkers. In this context, managers were seen to require more knowledge of what factors relate to

employees' perceptions of HR practices, and how they may align with the HR perceptions of different employees (Jiang et al., 2017).

Discussions of the reasons why employees leave work abound, and this is especially prevalent among nurses where the issue is widely recognized and has been studied in both western and developing countries (Aiken et al., 2013). In western countries, the predictive factors of nurses' intentions to leave their job (consequently leading to high staff turnover) related to job dissatisfaction. Push factors were identified as understaffing, emotional exhaustion, poor patient safety, performing non-nursing care tasks, and being a male nurse. Pull factors involved positive perceptions of the quality and safety of care, and performing core nursing activities (Sasso et al., 2019). In another study which examined reasons to remain in the workplace (Ahlstedt et al., 2019), work motivation was found to be enhanced by the interpersonal support existing between colleagues, meaning that nurses, physicians, and other colleagues respected and trusted each other's knowledge. Registered nurses' professional development through accessing new knowledge and learning during their daily work was seen to be essential, and actions which directly facilitated their work were also highlighted as an opportunity to work both independently and also together with other nurses (Ahlstedt et al., 2019). The reasons why nurses from developing countries leave their work and migrate are similar to those seen among western nurses, and include issues such as poor salaries and poor working conditions. Nurses in developing countries have been seen to be interested in their professional development, as well as seeking personal safety, personal freedom, seeking better working conditions including a need for money to send to their families, and creating a better life in their home country (Habermann & Stagge, 2010; Kingma, 2018).

Promotion of Well-Being at Work

In practice nursing, a study by Feather et al. (2014) was conducted into how nurse manager behaviors affect registered nurses' job satisfaction, and found that many of the nurses did not make a connection between the daily tasks of the manager and the manager's role in solving work issues that occurred during a shift. If job satisfaction was seen to be meaningful within the organization, then the manager was seen to be frequently present by staff on the unit. Overall, it was found that management behaviors seen as supporting nurses consisted of three themes which were communication, respect, and feeling cared for (Feather et al., 2014). Nurse managers were interviewed regarding ethical problems in their work (Aitamaa et al., 2016). The study revealed ethical conflicts related to a lack of appreciation toward particular groups of patients; to staff in regard to a lack of collegial behavior and problems in collaborating with other professionals; and related to the organization where a lack of appreciation was seen as a lack of value extended to the nursing profession, with nurse managers not taken into account in decision-making, and also the negative public image of the organization (Aitamaa et al., 2016).

METHODS

Developing the AMS 1.0 Scale

The AMS 1.0 was previously developed in several phases, consisting of a concept analysis, systematic literature review, and a Delphi study (Harmoinen et al., 2017). The instrument

was pretested empirically among 95 managers, and also in a survey conducted in Finland ($n = 426$ manager respondents from different management levels). Issues of validity and reliability throughout the development phases were carefully assessed. Four main categories emerged from the scale development, and were named as systematic management, equality, appreciating know-how, and the promotion of well-being at work. Each of these main categories included subcategories (Harmoinen et al., 2017). In order to further test the scale, a new electronic survey was conducted among health and social care managers who were members of their trade unions at the end of 2015 in Finland. The trade unions were chosen because most of the nurse managers under study belonged to these trade unions, and so they provided a convenient means by which they could be reached. The manager respondents ($n = 734$) were asked to assess the relevance of items measuring appreciative management.

Developing AMS 2.0

A panel discussion of the authors conducted before the survey led to 7 of the 83 items on the AMS 1.0 scale being reduced, based on the face-validity perception of the researcher and the author group. Arguments forwarded to reduce items were based on them having low meaning in relation to the large survey conducted in Finland (e.g., a value of 2.36 measured by on Likert scale of 1–5 was recorded concerning an item that asked whether the wage of employees was based on competence). Other reasons to exclude items were that the items partly overlapped, that they did not describe a relationship between the first-line manager and an employee, or the same situation could be deduced based on other items. A reason why some of the overlapping items had been included in the AMS 1.0 was that a large pool of items was needed to be initially surveyed and assessed by respondents from manager groups. This exercise furthered the knowledge about the functionality of the AMS 1.0 scale (Harmoinen et al., 2017).

An exploratory factor analysis (EFA) was conducted, and Cronbach alpha values of EFA were assessed with alphas ranging from 0.975 to 0.976. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy test value was 0.926 (p value .000). Communalities ranged from 0.372 (I am (=manager is) well educated) to 0.687 (Competency determines success, regardless of skin color.) Items were divided into four main factors according to the main categories. The EFA indicated that the items were acceptable in terms of the structure of appreciative management, but did not indicate the items which could reliably be deleted. For that reason, a confirmatory factor analysis (CFA) was performed using SPSS Amos software.

CFA was chosen as it is generally a recommended method to be used for scale development and validity testing. Specifically, CFA verifies the number of underlying dimensions of the instrument (factors) and the pattern of item-factor relationships (factor loadings) (Brown & Moore, 2012). In developing the AMS, CFA was used to study the AMS 1.0 scale and determine how it supported or indicated changes to the scale. CFA was also used for separating differences between items which were very close to each other, as the method enables the study of complex phenomena and the connections between a wide range of factors. The content (meaning all of the subcategories and items) was subject to open review. Any items or subcategory was able to be changed or cancelled according to the CFA, and the researcher did not restrict the process based on any earlier theoretical knowledge (Worthington & Whittaker, 2006).

Data Analysis

CFA testing started by cleaning any respondents who had submitted incompletely filled questionnaires ($n = 771 \rightarrow 734$) if questionnaires were filled under 20%. After their removal, any missing values were estimated by an imputation carried out with SPSS Amos software. In this process, once each missing value has been replaced by an imputed value, the resulting completed dataset can be analyzed using data analysis methods that are designed for complete data. The percentage of missing values was 2.23%.

Validity and reliability were tested on an item-by-item and subcategory-by-subcategory basis, based on the structure of the earlier instrument of appreciative management (Harmoinen et al., 2017). The internal consistency of the scale was calculated using Cronbach's alpha coefficients. The survey data was analyzed statistically using SPSS 23.0.

RESULTS

A total of 771 managers responded to the survey. After removal of the incomplete responses, the data included 734 valid responses. All of the respondents had managerial status, 94.6% of them were women, 56% were over 51 years old, and 4.4% were under the age of 35. The most of the respondents were nurses ($n = 322$, 44.8%), Doctor of Health Science educated ($n = 154$, 21.0%), public health nurses ($n = 113$, 15.4%), primary nurses ($n = 87$, 11.9%) and rest others. Most ($n = 627$, 85.4%) had a maximum of 50 staff below them. Most of the respondents worked in the healthcare sector (71.1%), but a smaller proportion stemmed from social care (26.4 %) and healthcare education (0.5%). About 25.6% of the managers had less than 5 years of managerial experience, and 13.8% had over 21 years of experience in their profession. The respondents from social care were included in the study because social and healthcare sectors work closely together in many clinical contexts in Finland. Educational perspectives were also included as they are needed in developing management approaches.

The new shorter and validated AMS 2.0 scale includes 24 items divided into four main categories. In total, 52 items were deleted from the original EFA scale during CFA due to their negative effects on the overall validity and reliability of the measurement model. Systematic management includes 5 items, and Equality 8 items further divided into two subcategories (equality of the manager and worker (4) and the equality of workers (4)). Appreciating know-how includes 4 items, and the Promotion of well-being at work includes 7 items (Table 1). The factor analysis was found to be valid (Table 2). The AMS 2.0 is based on the theoretical structure of appreciative management consisting of systematic management, equality, appreciating know-how, and the promotion of well-being at work.

To study the validity and reliability of the AMS 2.0 scale, the convergent and discriminant validity and construct reliability of the scales were examined. Convergent validity measures the extent to which variables intended to measure the same construct correlate with each other. Discriminant validity requires that variables measuring a construct do not correlate too strongly with variables measuring another construct, and construct reliability assesses the consistency of variables measuring the same construct (Churchill, 1995, p. 539). As an indication of discriminant validity, the square root of the Average Variance Extracted (AVE) value of a variable should be higher than the correlation of that variable with other variables. In the Composite Reliability (CR) and AVE tests of convergent validity, each CR score of the five factors was greater than its AVE score, and the AVE scores were greater than 0.50 (e.g., promotion well-being at work: CR = 0.917 >

TABLE 1   AMS 2.0: Number of Respondents, Number of Items, Mean Scores and Standard Deviations, Cronbach Alphas by Category and Subcategories

Category and Items	*n*	Mean	*SD*	Cronbach's Alpha
Systematic management (5 items)	693	4.30	.468	0.855
—Goal-oriented management		4.47	.704	
—Professional management		4.57	.687	
—Justice management		4.73	.600	
—Motivated management		4.70	.612	
—Criticality of management skills of manager		4.52	.714	
Equality (two subcategories) (8 items)	670	4.57	.440	0.886
Equality of manager and worker (subcategory) (4 items)	691	4.46	.490	0.856
—Taking care of rights of employee		4.62	.666	
—Accepting an employee as herself/himself		4.46	.776	
—Dividing work equally		4.44	.746	
—Equality of different age		4.67	.696	
Equality of workers (subcategory) (4 items)	705	4.69	.515	0.870
—Culture		4.35	1.063	
—Racism		4.20	1.148	
—Skin color		4.48	1.007	
—Gender		4.56	.930	
Appreciating know-how (4 items)	685	3.98	.559	0.846
—Rewarding work		4.20	.911	
—Work corresponds with professional skills of an employee		4.42	.762	
—Responsible work of a newly graduated employee		4.24	.865	
—Independence of staff		4.32	.867	
Promotion of well-being at work (7 items)	662	4.39	.500	0.915
—Taking into account working time preferences		4.48	.792	
—Health considerations in shift planning		4.55	.746	
—(Flexible) work time arrangements		4.41	.827	
—Reconciliation of work and family life of employees		4.50	.773	
—Good working conditions		4.51	.705	
—Listening to expectations of employees concerning work		4.59	.645	
—Listening to opinions of employees concerning work		4.62	.634	

Note. AMS = appreciative management scale; *SD* = standard deviation.

AVE = 0.614). Two tests were performed to evaluate discriminant validity. Each Maximum Shared Variance (MSV) score and ASV of the five factors was less than its AVE score (e.g., promotion of well-being at work MSV = 0.584, MSV < AVE = 0.584). The chi-square

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TABLE 2 Validity of the AMS 2.0 Instrument of Appreciative Management

	CR	AVE	MSV	MaxR (H)	Promotion of Well-Being at Work	Equality of Manager and Workers	Equality of Workers	Appreciating Know-How	Systematic Management
Promotion of well-being at work	0.917	0.614	0.584	0.924	**0.783**				
Equality of manager and workers	0.857	0.599	0.566	0.948	0.752	**0.774**			
Equality of workers	0.874	0.634	0.475	0.962	0.580	0.689	**0.796**		
Appreciating know-how	0.851	0.589	0.584	0.969	0.764	0.748	0.646	**0.768**	
Systematic management	0.850	0.532	0.504	0.974	0.616	0.710	0.409	0.555	**0.730**

Note. AMS = appreciative management scale; AVE = Average Variance Extracted; CR = Composite Reliability; MSV = Maximum Shared Variance.

TABLE 3   Factor Loadings of the Items of AMS 2.0

Items		Factors	Estimate
Systematic management S4	<—	Systematic management	0.685
Systematic management S3	<—	Systematic management	0.774
Systematic management S4P3	<—	Systematic management	0.794
Systematic management S4P2	<—	Systematic management	0.717
Systematic management S4	<—	Systematic management	0.670
Equality T1	<—	Equality manager	0.791
Equality J6	<—	Equality manager	0.763
Equality J5	<—	Equality manager	0.770
Equality J4	<—	Equality manager	0.772
Equality T9	<—	Equality worker	0.707
Equality T7	<—	Equality worker	0.845
Equality T6	<—	Equality worker	0.813
Equality T4r	<—	Equality worker	0.814
Appreciating know-how O5	<—	Appreciating know-how	0.684
Appreciating know-how I2	<—	Appreciating know-how	0.813
Appreciating know-how I4	<—	Appreciating know-how	0.823
Appreciating know-how I5	<—	Appreciating know-how	0.742
Promotion of well-being at work T1	<—	Promotion of well-being at work	0.830
Promotion of well-being at work T2	<—	Promotion of well-being at work	0.824
Promotion of well-being at work T3	<—	Promotion of well-being at work	0.831
Promotion of well-being at work T4	<—	Promotion of well-being at work	0.841
Promotion of well-being at work T6	<—	Promotion of well-being at work	0.686
Promotion of well-being at work V2	<—	Promotion of well-being at work	0.749
Promotion of well-being at work V9	<—	Promotion of well-being at work	0.706

Note. AMS = appreciative management scale.

statistic is 668.31 with 142 degrees of freedom (*p* value probability = .000) (Table 2) and 1154.028 with 241 degrees of freedom (*p* value probability = .000). Factor loadings were at a good level (0.670–0.845), being measured >0.60 (Worthington & Whittaker, 2006) (Table 3).

DISCUSSION

This article reports the further testing and validation of the AMS 1.0 scale. The revised scale, AMS 2.0, was tested among social and healthcare managers (*n* = 734) and showed the scale to be both useful and functional (Parahoo, 2014). The psychometric traits of the scale were measured at a good level (DeVon et al., 2007).

The ultimate goal was to develop a version that could be used in practice, alongside research, in order to evaluate managers' actions and offer support for their own progression. The shortened scale can be seen to be a useful instrument, for example, to evaluate a manager's progression as an expert of appreciative management. A study that looked for insights of nurse managers regarding the nurse manager role indicated that personal attributes were viewed as being important for success in the role, and included seeking opportunities and intentional self-growth (Moore et al., 2016). The Leadership Competencies for Healthcare Services Managers framework developed by the International Hospital Federation's global consortium for healthcare management can be used either individually, or on an organizational or national level. The self-assessment of personal leadership and management competencies in healthcare delivery organizations is viewed as a way to adapt and modify healthcare programs, and to encourage continuous professional development across organizations (Hahn & Lapetra, 2019).

Validity

Content validity was assessed as convergent validity and discriminant validity. Convergent validity was assessed by means of the criteria of Fornell and Larcker (1981) which are used to assess the degree of shared variance between the latent variables of the model. The AVE values ranged between 0.532 and 0.634 which is acceptable according to the criteria where a value level of 0.5 is acceptable and values above 0.7 are considered to be very good. CR values were at a very good level ranging from 0.850 to 0.914. CR is a less biased estimate for reliability than Cronbach's alpha values of CR which see values of 0.7 and above as acceptable (Cabrera-Nguyen, 2010; Fornell & Larcker, 1981) (Table 3).

Discriminant validity shows how an instrument is successful in discriminating concepts from each other (Morgan et al., 2001), and shows the degree to which measures of different traits are unrelated. Based on the phases undertaken previously, AMS 2.0 is able to discriminate appreciative management concepts from other concepts. Appreciating know-how lost the most items in the analysis. In the promotion of well-being at work, items concerning work shift were depressed which perhaps reveals the importance of the work shift in a worker's life. However, it is acknowledged that further new data can be gathered and analyzed to strengthen the results of this study.

Reliability

The internal consistency of the scale was assessed by means of Cronbach alpha coefficient, and CR values which fell close to the Cronbach alpha coefficient. Values were seen at the good or excellent level. The Cronbach's alpha of the whole scale was 0.944. The lowest value was 0.846 (appreciating know-how) and the highest 0.915 (promotion of well-being at work). A Cronbach alpha level was assessed in a related study of the realization of appreciative management from the viewpoint of First-Line Managers in social and healthcare, and *was* also found to be at good level with the Cronbach's alpha of the whole scale at 0.896 (Harmoinen & Suominen, 2019). In this study, the lowest value was 0.644 in

appreciating know-how and the highest 0.811 in the promotion of well-being at work. Internal consistency reliability refers to the homogeneity of the items of the scale, and it is deemed acceptable if the Cronbach's alpha levels are measured at 0.7 or higher (DeVellis, 2012). Thus, the levels reported in this study are seen as being an acceptable indicator of the AMS 2.0 instrument's internal reliability. The dimensions of the AMS 2.0 instrument were assessed by means of confirmatory factory analysis and CR values which both supported the scale structure and its dimensions. However, as this was the first testing of the instrument with 24 items, further testing among first-line managers and especially among managers working at other management levels is needed in the future.

Ethical Aspects

In regard to the presented study, permissions for conducting the research were requested from the governing bodies of the trade unions involved. Participants were informed of the survey by an instruction letter that outlined the purpose of the study, the process of data collection, the voluntariness of participation, the anonymity of participants, and provided contact information for the researchers (Parahoo, 2014). Thus, filling the questionnaire and sending it to the researcher was deemed as informed consent. This study was conducted according to published international ethical guidelines of good scientific practice (World Medical Association, 2013).

CONCLUSIONS

The results of this study indicate that the AMS 2.0 instrument has internal and external consistency. The survey has shown suitable psychometric properties which support its use to measure the organizational health and social environment and culture in a worksite health promotion context. The ability for employers and researchers to measure the constructs of the workplace environment and culture should facilitate the development of comprehensive strategies that improve employee health. The ultimate goal of this development was to formulate a version of the AMS instrument that could be used in practice and research to evaluate managers' actions and offer support for their progression. The new version of the instrument is especially suitable for first-line managers. However, we recommend the instrument also be used for assessing other management levels, so further testing is needed.

RELEVANCE TO NURSING PRACTICE, EDUCATION, OR RESEARCH

AMS 2.0 is a reliable and valid instrument for measuring appreciative management among first-line managers in healthcare and other work settings, and to support changes that develop workplace environments. The interactions between nursing managers, educationalists, and researchers are recommended as an area in which to strengthen the conversation about evidence-based management, based on the concept of appreciative management.

Declaration of conflicting interests

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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