The SCOPE-PC instrument for assessing patient safety culture in primary care: a psychometric evaluation

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ABSTRACT

Introduction Primary healthcare differs from hospitals in terms of - inter alia - organisational structure. Therefore, patient safety culture could differ between these settings. Various instruments have been developed to measure collective attitudes of personnel within a primary healthcare organisation. However, the number of valid and reliable instruments is limited.

Objectives Psychometric properties of the SCOPE-Primary Care instrument were tested to examine the instrument's applicability in home care services in Belgium.

Methods A cross-sectional study was conducted by administering the SCOPE-PC questionnaire in a single home care organisation with more than 1.000 employees, including nurses, midwives, healthcare assistants, diabetes educators, and nursing supervisors. First, a confirmatory factor analysis (CFA) was performed to test whether the observed dataset fitted to the proposed seven-factor model of the SCOPE-PC instrument. Second, Cronbach's alphas were calculated to examine internal consistency reliability. Finally, the instrument's validity was also examined.

Results In total, 603 questionnaires were retained for further analysis, representing an overall response rate of 44%. Most respondents were nursing staff, followed by healthcare assistants and nursing supervisors. The results of the confirmatory factor analysis satisfied the chosen cut-offs, indicating an acceptable to good model fit. With the exception of 'organizational learning', Cronbach's alpha scores of the SCOPE-PC scales indicated a good level of internal consistency: 'open communication and learning from error' (0.86), 'handover and teamwork' (0.78), adequate procedures and working conditions' (0.73), 'patient safety management' (0.81), 'support and fellowship' (0.75), and 'intention to report events' (0.85). Moreover, inter-correlations between the seven dimensions as well as with the patient safety grade were moderate to good.

Conclusions The present study indicates that the SCOPE-Primary Care instrument has good psychometric properties for home care services in Belgium. No modifications are required to the original questionnaire in order to allow benchmarking between primary healthcare settings.

Keywords Primary Healthcare; Patient Safety; Safety Management; Validation Study; Psychometrics

INTRODUCTION

Since the publication of the report *To Err is Human* by the Institute of Medicine (IOM) in 1999, patient safety became a global health topic (1). The IOM report triggered researchers to develop new systematic approaches to improve patient safety in healthcare settings. Patient safety culture has gained much interest and is one of the main focuses in patient safety research (1). It refers to '*the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management*' (2). The concept of *safety culture* originated outside healthcare, in studies of high reliability organisations (i.e., organisations that consistently minimize adverse events despite carrying out intrinsically complex and hazardous work). These organisations maintain a commitment to safety at all levels; that is from frontline providers to managers and executives. This commitment establishes a culture of safety which is associated with higher employee safety compliance and better organisational performance (3). A positive patient safety culture is important in the context of safe care as it entails an atmosphere of open communication, learning from error and mutual trust.

Due to an aging population and medical progresses, a considerable part of healthcare delivery continues to shift from secondary to primary care and home settings (4). At the same time, the demand for home and community services is increasing substantially in order to reduce the number of hospital beds, facilitate earlier hospital discharge, improve quality of care, and decrease associated costs (5,6). Moreover, primary healthcare professionals are encouraged to work together in broad healthcare centres, to collaborate in disease management programs and to consult each other in managing patient care. This reflects the move to a more integrated primary healthcare through collaborative partnerships across multidisciplinary teams (7).

Despite this awareness, most tools to measure and strengthen patient safety culture have been developed and tested in hospitals (8-10). Because of the increase in collaboration within primary healthcare as well as with secondary care, the prevailing safety culture in primary healthcare also becomes an important condition for patient safety in practice (11). Healthcare organisations need specific tools to measure patient safety culture. Various instruments have been developed to measure collective attitudes of personnel within a primary healthcare organisation (12-25). However, the number of valid and reliable instruments is limited. Nevertheless, a generic patient safety culture instrument is needed to enable comparison between different primary healthcare settings and to facilitate exchange of learning and improvement strategies. Based on a review of the literature[1], the SCOPE-Primary Care questionnaire was chosen as the most appropriate tool to measure safety culture in primary care as the instrument has good psychometric properties and has been validated in the Netherlands for several primary healthcare facilities (26). However, the instrument was not validated for home care services. Moreover, it is possible that cultural differences between healthcare environments within or between countries exist which may weaken the validity of the instrument. Therefore, it is important to carefully test the SCOPE-PC

[1] The paper is not published yet. Contact corresponding author for details.

questionnaire before using the instrument and interpreting its results in a Belgian primary healthcare setting.

OBJECTIVES

Taking into consideration the cultural differences in measuring patient safety culture in primary healthcare and to allow national and international comparison of research findings, psychometric properties of the SCOPE-Primary Care instrument were tested to examine the instrument's applicability in home care services in the Dutch speaking part of Belgium (Flanders).

METHODS

SCOPE-Primary Care Instrument

The original SCOPE questionnaire is a modification of the Dutch Hospital Survey on Patient Safety Culture (HSPSC) and was developed in 2011 for general practices only (27). In 2013, the SCOPE instrument was also validated for dietetics, occupational therapy, physiotherapy, midwifery, skin therapy, speech therapy, dental care, exercise therapy, and anticoagulation clinics (26). Verbakel *et al.* adjusted the original SCOPE questionnaire through an iterative process. First, a research team revised the terminology of the questionnaire. Second, professionals from all primary care professions assessed the questionnaire individually on clarity and applicability to their own setting. Adjustments were limited to a few changes of terminology. The final SCOPE-Primary Care instrument consists of 41 items, clustered in seven patient safety culture dimensions: [1] Open Communication and Learning from Error, [2] Handover and Teamwork, [3] Adequate Procedures and Working Conditions, [4] Patient Safety Management, [5] Support and Fellowship, [6] Intention to Report Events, and [7] Organizational Learning. With Cronbach's alphas ranging from 0.70 to 0.90, internal consistency of the SCOPE-PC questionnaire was excellent. Moreover, the questionnaire had good construct validity (26).

In the SCOPE-PC instrument, respondents address the safety culture items by means of a five-point Likert scale of which the labels vary from 1 ('strongly disagree' or 'never') to 5 ('strongly agree' or 'always'). In addition, two questions regarding the frequency of incident reporting in the last twelve months and a patient safety grade ranging from 1 ('failing') to 5 ('excellent') are included. Finally, some background questions address demographic and work-related information such as profession and working experience.

Setting, Participants and Data Collection

A cross-sectional study was conducted. This study used a convenience sample and administered the SCOPE-PC questionnaire in a single home care organisation (White-Yellow Cross West-Flanders) with more than 1.000 employees that includes nurses, midwives, healthcare assistants, diabetes educators, and nursing supervisors. Data collection occurred between September and November 2016 through the online platform Qualtrics. The electronic questionnaire targeted all healthcare professionals, supervisors, managers, and administrators who had direct or indirect interaction with patients. All healthcare and non-healthcare professionals received an invitation by e-mail. Two reminders were sent with an interval of two weeks. Furthermore, several steps were

taken to mitigate the risk of common method bias, both ex-ante remedies as well as statistical controls after the questionnaires were returned (i.e., during the design and administration stage of the questionnaire, respondents were assured of confidentiality of the study and that there were no right or wrong answers) (28). Participants were informed about the purpose of the study and that their participation was anonymous, voluntarily and confidential. The home care organisation received a feedback report regarding staff perceptions on patient safety issues, medical errors and event reporting.

Statistical Analyses

All analyses were performed using R: A Language and Environment for Statistical Computing version 3.2.2 (R Foundation for Statistical Computing, Vienna, Austria) (29). Regarding the rule of thumb of 10 respondents per instrument item, at least 410 completed questionnaires were needed (30). Questionnaires with more than 50% missing values were excluded from analyses. Item analysis was performed in order to identify problematic items with high proportion of missings (35% or more) or with a highly-skewed distribution (85% or more of the respondents answered on the same side of the response scale).

As this study used an existing questionnaire, a *confirmatory factor analysis* (CFA) was performed to test whether the observed dataset fitted to the proposed seven-factor model of the SCOPE-PC instrument (30). Bartlett's Test of Sphericity ($P<0.05$) and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (>0.60) were performed to establish the adequacy of the sample for factor analysis (31). Afterwards, a set of goodness-of-fit indices was used: the X^2 with an associated *df* and probability, Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). A non-significant X^2 means that the discrepancies between the hypothesized model and the empirical data are negligibly small and thus indicate a good fit. The other parameters measure how well the empirical model approaches the theoretical model. A CFI and TLI value between 0.90 and 0.95, a RMSEA value of $\leq$0.06 and a SRMR value of $\leq$0.08 is considered a close fit of the model (32).

Furthermore, *internal consistency* of the factors was measured using Cronbach's alpha (α) which is - like other reliability coefficients - interpreted as a normal range of values between 0.00 and 1.00, with higher values reflecting higher internal consistency (30). A positive rating for internal consistency is met when Cronbach's alphas are equal or greater than 0.60, indicating that the different items measure the same concept (33). Cronbach's alphas were calculated for each scale of the SCOPE-PC instrument.

Inter-correlations between dimensions were examined to assess *construct validity*. A composite score for all dimensions was calculated by obtaining the mean score of all items within one dimension. Additionally, correlations between the seven safety culture dimensions and the patient safety grade were computed. Inter-correlations between dimensions were calculated with the Pearson correlation coefficient. Correlations between 0.30 and 0.70 are often recommended (30).

Finally, results of the patient safety culture assessment were also reported. Since the questionnaire contains both positively and negatively worded items, the latter were recoded so that higher scores always reflect a positive response. First, positive dimensional scores (percentage of positive responses) were calculated. Answers above 3 ('agree/strongly agree' or 'most of the time/always') were considered as positive towards patient safety. Strengths were defined when ≥75% of respondents answered positive. Areas with potential for improvement were identified as items with <50% of respondents answered positively (34). The Kruskal-Wallis Test was conducted to assess statistical differences in positive dimensional scores between professions. The significance level α was set at 0.05 and all *P*-values were two-sided.

Ethical Consideration

Participants were informed that the collected information would be kept confidential and that the questionnaire was anonymous. There were no incentives provided for completing the questionnaire. The institutional ethics committee of Hasselt University approved the study (ref. CME2016/641).

RESULTS

In total, 665 individual questionnaires were returned from 1.375 employees. Sixty-two questionnaires were omitted from the study because participants did not fill out at least 50% of the items. Finally, 603 questionnaires were retained for further analyses, representing an overall response rate of 43.9%. Consequently, the rule of thumb of 10 respondents per instrument item was met. The response rate was markedly lower for non-healthcare assistants (20.7%) than for healthcare assistants (38.7%), nurses (42.4%), managers (53.3%), and nursing supervisors (54.8%). Overall, proportions of missings was low with the highest proportion of 20.9% for item B4 (*My supervisor/manager overlooks patient safety problems that happen over and over*). In addition, there were no items with extreme skewness. Furthermore, Bartlett's Test was significant ($P<0.001$) and the Kaiser-Meyer-Olkin Measure was 0.90, indicating that the dataset was appropriate for factor analysis.

Respondents' Characteristics

Characteristics of respondents are listed in Table 1. Most of the respondents were female (n=555, 92.0%). The median age was 41 years, with a range from 20 to 64 years. Most respondents were nursing staff (n=481, 79.8%), followed by healthcare assistants (n=43, 7.1%) and nursing supervisors (n=23, 3.8%). Almost 50% of the sample had worked between 1 and 10 years in the home care organisation (n=281, 46.5%). Most of the respondents had direct interaction or contact with patients (n=555, 92.0%).

Psychometric Properties

The results of the *confirmatory factor analysis* satisfied the chosen cut-offs, indicating an acceptable to good model fit (see Table 2): CFi=0.930, TLI=0.916, RMSEA=0.058, and SRMR=0.063. However, the Chi-square Statistic was significant ($X^2=7441.996$, $df=780$ and $P<0.001$). Nevertheless, it tends to result in a rejection of the model in large samples (over 200 cases) and is therefore sensitive to sample size (35). Furthermore, all items showed factor loadings

higher than the chosen 0.50 cut-off value, indicating an acceptable allocation of the 41 items in the proposed seven factors.

With the exception of the dimension 'organizational learning', Cronbach's alpha scores of the SCOPE-PC scales indicated a good level of *internal consistency* (see Table 2). The Cronbach's alpha was 0.86 for 'open communication and learning from error', 0.78 for 'handover and teamwork', 0.73 for 'adequate procedures and working conditions', 0.81 for 'patient safety management', 0.75 for 'support and fellowship', 0.85 for 'intention to report events', and 0.58 for 'organizational learning'.

Table 3 shows the correlations between the seven dimensions as well as with the patient safety grade. Overall, inter-correlations were moderate to good. The highest correlations were found between 'patient safety management' and 'open communication and learning from error' (r=0.65), 'patient safety management' and 'adequate procedures and working conditions' (r=0.50) and finally 'patient safety management' and 'support and fellowship' (r=0.51). However, none of the correlations were extremely high (>0.70). This indicates that none of the dimensions needed to be combined. Remarkable, the dimension 'intention to report events' did not correlate with other dimensions (r= 0.10 – 0.27). Additionally, correlations with the patient safety grade were also moderate to good, with positive correlations ranging from 0.35 to 0.51 except for the dimension 'intention to report events' (r=0.20).

Positive Dimensional Scores

Table 4 presents the item scores and overall positive dimensional scores. The highest percentages of positive responses were found for 'organizational learning' (71.7%), 'support and fellowship' (63.5%), 'patient safety management' (60.3%), and 'open communication and learning from error' (57.6%). Three dimensions scored below%: 'intention to report events' (48.5%), 'adequate procedures and working conditions' (43.4%) and 'handover and teamwork' (43.0%). Overall, managers had better perceptions in comparison to healthcare professionals and non-healthcare assistants. This finding was statistical significant (P<0.001) for the dimensions 'open communication and learning from error' (with respectively 67.7%, 59.1% and 44.1%) and 'patient safety management' (with respectively 87.5%, 62.2% and 53.3%). Additionally, 60.7% of the employees graded patient safety in their organisation as *good* and 30.3% *never* reported an incident within the last twelve months (see Table 5).

DISCUSSION

Organisations with a positive patient safety culture are more likely to learn openly and effectively from failure. Safety culture measurements mainly rely on a quantitative method, using individual and self-administered questionnaires. Scores are aggregated to provide a measure of those dimensions known to be important markers of patient safety culture. However, an instrument can only be applied to measure patient safety when the different dimensions are correctly assessed. The data presented in this article are part of a larger study regarding patient safety culture assessments in primary care in Belgium. In this study, a database containing over 600 responses was used to assess the psychometric properties of the SCOPE-Primary Care instrument in a single home care organisation.

Overall, psychometric properties of the SCOPE-PC instrument proved satisfactory and the results of the validation work support the seven-factor and 41-item model. The fit indices of the model were acceptable and the items showed moderate to high factor loadings. Moreover, Cronbach's alpha scores indicated moderate to good internal consistency for all dimensions and inter-correlations between the seven dimensions as well as with the patient safety grade were also moderate to good. Consequently, no changes were made to the safety culture instrument. The findings were comparable with the SCOPE-PC validation study in the Netherlands (26). However, caution must be taken when comparing validation results across studies since a different use of samples and data collection methods are reported.

In order to identify areas of weaknesses and strengths in patient safety, positive dimensional scores were calculated. This study indicated some areas for improvement in patient safety, especially regarding 'handover and teamwork', 'intention to report events' and 'adequate procedures and working conditions'. Improvements may be realised through open communication, non-punitive policies with respect to error reporting and staffing improvements. Additionally, there were some notable differences in positive dimensional scores among professions. This is consistent with other research that reported higher patient safety culture scores from those with managerial responsibilities (12,14,17,23). However, a larger study is needed to explore patient safety culture in primary care. Primary healthcare organisations can use the SCOPE-PC instrument to measure their employee's safety attitudes on a regular basis and track trends of culture changes.

With regard to limitations, a *first* limitation concerns the relatively low internal consistency of the dimension 'organizational learning' (α=0.58). However, as the alpha value is influenced by the number of items in a scale, the low value could also be a consequence of the inclusion of only three items (36). Therefore, it is advised that the items within this dimension should not be deleted since they signify important aspects of patient safety. *Furthermore*, the absence of correlations between the dimension 'intention to report events' and other dimensions is remarkable. Verbakel *et al*. proposed two main explanations, namely the facts that incident reporting is still uncommon in primary care and that the questions regarding incident reporting relate to actual steps to be undertaken rather than how the respondents feel or think of the culture in their practice (26). *Third*, the present study focused on a quantitative approach to assess patient safety culture. A questionnaire approach is desirable considering the high-volume patient throughput and limited opportunities for collective learning. It is an economical method - both in time and money - when conducting a large-scale study, but questionnaires only provide a snapshot at a single point of time. An additional qualitative approach is recommended to obtain more breadth and depth of understanding patient safety culture in primary healthcare. One such method has been developed for primary care in the UK: the Manchester Patient Safety Framework (MaPSaF) is a tool to help organisations and healthcare teams assess their progress in developing a positive safety culture (11). *Moreover*, Blegen *et al*. questioned the meaning of identifying high and low scoring dimensions as the latter might be a reflection of the negatively worded items rather than a weakness of safety culture (37). *Fifth*, wide variations in the perception of safety culture can exist within a single organisation (10). Future research must therefore use multilevel analyses to measure variation in safety culture perceptions within primary care settings, relating to individual and practice characteristics. Finally, the SCOPE-PC instrument was tested in a specific primary

healthcare organisation. Hence, caution is required when generalising safety culture perceptions between and within different types of healthcare settings given their context-specific nature. Therefore, it is recommended that patient safety culture questionnaires are validated before their use in a specific healthcare context.

CONCLUSIONS

Validation of the SCOPE-Primary Care instrument was performed using the same strategy as the original questionnaire. In conclusion, the present study indicated that the SCOPE-PC questionnaire has good psychometric properties to assess patient safety culture in home care services in Belgium. Although the dimension 'organizational learning' was measured with a too low level of internal consistency, it is suggested that no modifications are required to the SCOPE instrument in order to allow benchmarking between different primary healthcare settings. Still, caution must be taken when generalising safety culture perceptions between different types of healthcare settings, given their context-specific nature. It is therefore recommended that safety culture instruments are validated before their use. The next step in further patient safety research is to explore the current safety culture in primary healthcare and to identify possible differences between professions.

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Table 1 Respondents' Characteristics (n=603)

Respondents' Characteristics			
Profession	**N (%)**	**Working time (hours)**	**N (%)**
Nurses	481 (79.8%)	Less than 20 hours per week	167 (27.7%)
Healthcare assistants	43 (7.1%)	21 to 30 hours per week	154 (25.5%)
Midwives	1 (0.2%)	31 to 40 hours per week	224 (37.1%)
Diabetes educators	1 (0.2%)	*Missing*	*58 (9.6%)*
Nursing supervisors	23 (3.8%)	**Interaction with patients**	**N (%)**
Managers	8 (1.3%)	Yes	555 (92.0%)
Non-healthcare assistants	17 (2.8%)	No	21 (3.5%)
Missing	*29 (4.8%)*	*Missing*	*27 (4.5%)*
Professional experience in organization	**N (%)**	**Overall professional experience**	**N (%)**
Less than 1 year	39 (6.5%)	Less than 1 year	75 (12.4%)
1 to 5 years	159 (26.3%)	1 to 5 years	94 (15.6%)
6 to 10 years	122 (20.2%)	6 to 10 years	82 (13.6%)
11 to 15 years	46 (7.6%)	11 to 15 years	43 (7.1%)
16 to 20 years	48 (8.0%)	16 to 20 years	67 (11.1%)
21 years or more	154 (25.6%)	21 years or more	209 (34.7%)
Missing	*35 (5.8%)*	*Missing*	*33 (5.5%)*

Table 2 Factor Loadings and Reliability Coefficients

Item	Description	F1	F2	F3	F4	F5	F6	F7	α
Open communication and learning from error									0.86
C1	We are given feedback about changes put into place based on event reports	0.67							
C2	Staff will freely speak up if they see something that may negatively affect patient care	0.73							
C3	We are informed about errors that happen in this practice	0.72							
C4	Staff feel free to question the decisions or actions of those with more authority	0.69							
C5	In this practice, we discuss ways to prevent errors from happening again	0.80							
C7	Professionals discuss errors that occurred with each other	0.59							
C9	We are given personal feedback about our own event reports	0.61							
B4n	My supervisor/manager overlooks patient safety problems that happen over and over	0.58							
Handover and teamwork									0.78
F1n	Problems often occur in the exchange of information across disciplines in our practice		0.53						
F2n	The fact that patients are treated by different professionals in our practice is causing problems		0.64						
F3n	Disciplines in the practice that we co work with do not coordinate well with each other		0.63						
F4	There is a good exchange of information between professionals in this practice		0.56						
F5	There is a good exchange of information between supporting staff in this practice		0.55						
F7n	Things fall between the cracks when transferring patients between different disciplines in this practice		0.64						
F8n	Important patient care information is often lost because patients see different professionals		0.62						

Item	Description	F1	F2	F3	F4	F5	F6	F7	α
Adequate procedures and working conditions									0.73
A5n	It is just by chance that more serious mistakes don't happen around here			0.68					
A7n	We use more agency/temporary staff than is best for patient care			0.58					
A8n	Staff feel like their mistakes are held against them			0.59					
A10n	In this practice, we work longer hours than is best for patient care			0.68					
A12n	When an event is reported, it feels like the person is being written up, not the problem			0.60					
A13n	We work in crisis mode trying to do too much, too quickly			0.77					
A14n	Staff worry that mistakes they make are kept in their personnel file			0.56					
A15n	We have patient safety problems in this practice			0.69					
B3n	Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts			0.57					
Patient safety management									0.81
B1	My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures				0.67				
B2	My supervisor/manager seriously considers staff suggestions for improving patient safety				0.72				
B5	My supervisor/manager provides a work climate that promotes patient safety				0.73				
B6	The actions of my supervisor/manager show that patient safety is top priority				0.74				
B7n	My supervisor/manager seems interested in patient safety only after an adverse event happens				0.61				

Item	Description	F1	F2	F3	F4	F5	F6	F7	α
Support and fellowship									0.75
A1	People support one another in this practice					0.65			
A2	We have enough staff to handle the workload					0.77			
A3	When a lot of work needs to be done quickly, we work together as a team to get the work done					0.63			
A4	In this practice, people treat each other with respect					0.67			
A11	When someone in this practice gets really busy, others help out					0.70			
Intention to report events									0.85
D2	When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?						0.71		
D3	When a mistake is made, but has no potential to harm the patient, how often is this reported?						0.93		
D4	When a mistake is made that could harm the patient, but does not, how often is this reported?						0.81		
Organizational learning									0.58
A6	We are actively doing things to improve patient safety							0.66	
A9	Mistakes have led to positive changes here							0.61	
A16	Our procedures and systems are good at preventing errors from happening							0.51	

Table 3 Correlations with Patient Safety Grade and Inter-correlations Between the Seven Dimensions

Dimensions	Patient Safety Grade	1	2	3	4	5	6
Open communication and learning from error	0.51**						
Handover and teamwork	0.35**	0.36**					
Adequate procedures and working conditions	0.36**	0.44**	0.38**				
Patient safety management	0.51**	0.65**	0.39**	0.50**			
Support and fellowship	0.43**	0.47**	0.31**	0.38**	0.51**		
Intention to report events	0.20**	0.27**	0.16**	0.18**	0.25**	0.10**	
Organizational learning	0.46**	0.48**	0.34**	0.39**	0.49**	0.48**	0.17**

** Correlation is significant at the 0.01 level (2-tailed).

Table 4 Positive Dimensional Scores and Item Scores (n=603)

	N	Mean (SD)	% Positive	Skewness	Kurtosis
Open communication and learning from error = 57.57%					
We are given feedback about changes put into place based on event reports	603	3.65 (0.98)	60.20%	-0.540	-0.031
Staff will freely speak up if they see something that may negatively affect patient care	603	3.84 (0.86)	68.16%	-0.455	-0.36
We are informed about errors that happen in this practice	603	3.57 (0.97)	57.05%	-0.431	-0.229
Staff feel free to question the decisions or actions of those with more authority	603	3.23 (0.97)	41.79%	-0.239	-0.385
In this practice, we discuss ways to prevent errors from happening again	603	3.85 (0.86)	72.14%	-0.732	0.651
Professionals discuss errors that occurred with each other	603	3.64 (0.87)	61.53%	-0.524	0.124
We are given personal feedback about our own event reports	603	3.36 (1.01)	48.26%	-0.342	-0.366
My supervisor/manager overlooks patient safety problems that happen over and over	477	3.61 (0.91)	64.99%	-0.789	0.429
Handover and teamwork = 43.00%					
Problems often occur in the exchange of information across disciplines in our practice	574	2.79 (1.01)	21.43%	0.654	0.650
The fact that patients are treated by different professionals in our practice is causing problems	586	3.06 (0.97)	39.59%	-0.287	-0.782
Disciplines in the practice that we co work with do not coordinate well with each other	581	3.36 (0.87)	50.77%	-0.443	0.143
There is a good exchange of information between professionals in this practice	583	3.88 (0.82)	75.30%	-0.639	0.660
There is a good exchange of information between supporting staff in this practice	581	3.84 (0.84)	72.98%	-0.566	0.686
Things fall between the cracks when transferring patients between different disciplines in this practice	569	2.74 (1.01)	15.29%	0.803	1.444
Important patient care information is often lost because patients see different professionals	581	2.73 (1.08)	28.23%	0.254	-0.572

	N	Mean (SD)	% Positive	Skewness	Kurtosis
Adequate procedures and working conditions = 43.35%					
It is just by chance that more serious mistakes don't happen around here	601	3.46 (1.08)	51.11%	-0.125	-0.052
We use more agency/temporary staff than is best for patient care	601	3.57 (1.22)	47.27%	0.149	-0.256
Staff feel like their mistakes are held against them	601	3.61 (1.01)	61.32%	-0.641	0.697
In this practice, we work longer hours than is best for patient care	601	2.79 (1.09)	24.96%	0.303	-0.169
When an event is reported, it feels like the person is being written up, not the problem	601	3.60 (0.96)	61.45%	-0.523	0.400
We work in crisis mode trying to do too much, too quickly	601	2.46 (1.09)	18.18%	0.599	0.057
Staff worry that mistakes they make are kept in their personnel file	601	2.88 (1.03)	27.85%	0.118	-0.249
We have patient safety problems in this practice	601	3.65 (0.88)	64.92%	-0.528	1.226
Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts	477	3.41 (0.93)	53.25%	-0.388	-0.494
Patient safety management = 60.25%					
My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures	479	3.23 (1.04)	47.81%	-0.428	-0.588
My supervisor/manager seriously considers staff suggestions for improving patient safety	478	3.63 (0.82)	67.36%	-1.016	1.240
My supervisor/manager provides a work climate that promotes patient safety	476	3.63 (0.78)	65.76%	-0.875	0.988
The actions of my supervisor/manager show that patient safety is top priority	479	3.57 (0.78)	58.25%	-0.626	0.880
My supervisor/manager seems interested in patient safety only after an adverse event happens	479	3.63 (0.90)	62.63%	-0.585	0.173
Support and fellowship = 63.52%					
People support one another in this practice	603	4.28 (0.79)	89.35%	-1.230	2.211
We have enough staff to handle the workload	603	2.65 (1.01)	23.22%	0.272	-0.690
When a lot of work needs to be done quickly, we work together as a team to get the work done	603	3.49 (1.06)	54.84%	-0.198	-0.215
In this practice, people treat each other with respect	603	4.05 (0.78)	82.09%	-0.796	0.880
When someone in this practice gets really busy, others help out	603	3.74 (0.96)	70.00%	-0.651	0.016

	N	Mean (SD)	% Positive	Skewness	Kurtosis
Intention to report events = 48.54%					
When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	603	3.17 (1.22)	41.46%	-0.056	-1.004
When a mistake is made, but has no potential to harm the patient, how often is this reported?	603	3.27 (1.17)	42.62%	-0.109	-0.850
When a mistake is made that could harm the patient, but does not, how often is this reported?	603	3.71 (1.10)	61.53%	-0.564	-0.451
Organizational learning = 71.74%					
We are actively doing things to improve patient safety	598	4.10 (0.72)	83.89%	-0.549	0.739
Mistakes have led to positive changes here	598	3.81 (0.80)	69.34%	-0.155	0.732
Our procedures and systems are good at preventing errors from happening	598	3.70 (0.77)	63.76%	-0.347	0.533

Table 5 Patient Safety Grade and Numbers of Events Reported (n=603)

Outcome Questions			
Patient safety grade	**N (%)**	**Number of events reported**	**N (%)**
Poor	2 (0.3%)	None	183 (30.3%)
Moderate	42 (7.0%)	1 to 2	144 (23.9%)
Acceptable	160 (26.5%)	3 to 5	70 (11.6%)
Good	366 (60.7%)	6 to 10	41 (6.8%)
Excellent	33 (5.5%)	11 to 20	16 (2.7%)
		More than 20	6 (1.0%)