Nurse's Wellbeing at Work & Quality Nursing Care
The Case of Hospitals In Lebanon

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Abstract
Our purpose in this research is to find if there is a relationship between the wellbeing at work of nurses in Lebanese hospitals and their quality nursing care. Our study is a correlational study where we will see the correlation between the wellbeing at work and the quality nursing care of nurses at Lebanese hospitals. It is a quantitative study as well. Our sample consists of 160 nurses from 23 hospitals in Lebanon. By using the F test, we showed that there is significance at   = 0.05. The quality nursing care Y is dependent on the wellbeing at work of nurses (Xi). Second, while testing for significance using the t Test, we concluded that there is a relationship between the variables Xi. Using the stepwise regression analysis, we kept only two variables (the level of agreement that the work of the nurse has grown more interesting in the last year and the level of agreement that the nurse has enough opportunity to discuss patient problems with colleagues).Finally, using the factor analysis technique (FA), we extracted 4 principal components that explained 78.73% of the variability. The 4 principal components are: Working effectively in a team, Self-image satisfaction, Job satisfaction, and Work Performance.In the last part, we concluded that there is a relationship between the wellbeing at work of nurses in Lebanese hospitals and their quality nursing care.
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1. Introduction

Quality nursing care is a major factor in hospitals. The quality nursing care of nurses is not always excellent; sometimes, it is near average. Hospitals administration and HR managers are permanently seeking ways to improve the quality nursing care. The hospital's reputation is very affected by the quality of the service and care provided by the nurses.

From another perspective, the central role of adult life (Harter, 2002), has both negative and positive effects on the physical and mental state of the workers. The psychological health of employees has gradually become a major issue for companies and hospitals. A high level of well-being improves various aspects of the individual's life by including the professional aspect (Seligman, 2000).

As we know, nurses in hospitals are constantly under stress during their working hours. If we can find ways to improve their mental wellbeing at their work, that will be a good idea.

Patients' satisfaction is important for the hospital reputation. Is the quality nursing care dependent on the level of wellbeing at work of the nurses? If yes, then by improving the wellbeing at work of the nurses we can increase their level of well-being in general, which will lead to a better quality care for patients. This research aims to test whether the wellbeing at work of nurse staff affects their service toward patients.

2. Literature Review

In the last 5 years, there has been more emphasis on the well-being of nurses. 59 studies show the impact of wellbeing at work of nurses and its relation to absenteeism, shifts, job performance, effort, and promotion style. It was shown that wellbeing at work of nursing staff in hospital is related to work environment, team work, engagement, professional commitment, stress, and patient satisfaction. Moreover, in order to improve patients' perception of quality care we must increase the satisfaction of nurses in their workplace (HongLua, YangZhaoa, & AlisonWhileb, 2019).

Research on character strengths might not only prevent negative consequences at workplace, but also nurturing positive outcomes, such as well-being, engagement, and a positive organizational environment. Therefore, in order to understand the aspects contributing to well-being and health in the workplace, we must rely on the character strengths theory, which is a promising field (Höfe, Gander, Höge, & Ruch, 2019).

A study by (Haddon, 2018) examines the impact of mental health on the productivity and symptoms that employees may experience if they suffer from mental illness. Mental health is one of the factors contributing to a better productivity. For this reason, employers should do more to ensure a good level of staff well-being (Rao, Ramani, Raveena, & Nikitha, 2016).

Another Canadian study was conducted in 2017, where 250,000 Canadian workers were followed in more

than 40 organizations. The study aimed to develop the national mental health of employees. The majority of those organizations started to implement wellbeing at the workplace because they were convinced that it is better for both employees and organization reputation. Therefore, after a three-year case study project, many organizations started to see positive changes, such as improvement in organizational reputation, increasing in employee engagement from 53% to 72%, and improvement in employee health and wellbeing. In addition, patient satisfaction levels have increased from 85% to 92%. Some steps followed by the organization to increase wellbeing at workplace included: team support system for staff exposed to traumatic situations at work (Devine & Garron, 2017).

Two factors responsible of nurses' dissatisfaction in their workplace are: 1) experiencing stress from excessive work demands and the unhealthy environment. 2) the lack of respect and recognition for the nurses' work. On the other hand two other factors show the influences on nurses' job satisfaction: 1) recognition for work done, and 2) professional opportunities and promotions, and relationships with coworkers (Tao, H. Ellenbecker, Wang, & Li, 2015).

Researchers from University of Pennsylvania looked at 550 hospitals in California, New Jersey, Pennsylvania, and Florida; they found that nurses who claimed they enjoyed their work environments were better at taking care of patients. "We find that places where nurses have a good experience working are places where nurses are better able to do their jobs. Satisfied nurses are more autonomous, they're supported by management, and they're integrated into hospital decision making" (Magaldi, 2015).

A cross-sectional and descriptive study, based on a secondary analysis of survey data acquired during the At Safe study in Finland were conducted to analyze, how the wellbeing at work of nursing staff influence, older patients' perceptions of the quality care. The study included 98 hospitals and lasted one year. The participants were 1909 patients and 929 nursing staff. Patients' perceptions of quality of care were measured using the 42-item RHCS questionnaire. The results showed that patients' perceptions of the quality of care are positively related to the wellbeing at work of nursing staff. A sufficient number of staff nurses are revealed to be an affecting factor of the quality nursing care. During the same study, it was also found that older patients are more satisfied with a sufficient staff number than younger patients (T, A, R, & K, 2014).

A descriptive qualitative research design was used to collect data. 4 groups were conducted; each one includes 6 registered nurses in hospital care, mental health care, home care and nursing home care. A total of 24 nurses were recruited through purposeful sampling. The nurses gave fundamental elements that they believe may improve patient satisfaction: competent nurses, cooperation between staff nurses, nursing autonomy, nursing practice supervision, support from the manager, and patient-centered vision (Brouwer, Francke, & Delnoij, 2014).

The present nursing shortage and the elevated number of turnover is an important issue in many countries. This problem has an impact on the efficiency and effectiveness of healthcare staff outcomes. Retention and recruitment of nurses are persistent problems linked to job satisfaction. More than 100 papers related to wellbeing at work among hospital nurses obtained from systematic searches of seven databases covering Chinese and English language publications 1966-2011 showed that hospital nurse wellbeing at work is closely related to workplace conditions, hospital environment, work stress, and the professional commitment (HongLu, Barriball, Zhang, & E.While, 2012).

In hospitals where the number of nurses is insufficient, it is common for nurses to be asked to stay on for a double-shift. This could disservice the quality patient care. One study done with the help of National Institute of Nursing Research, founded that if hospital nurses working shifts exceeds the 13 hours, patients' satisfaction will decrease. Moreover, nurses working more than 10 hours per 24 hours were found to be 2.5 times more likely than nurses working shorter hours to develop symptoms of burnout and job dissatisfaction (Stimpfel, Sloane, & Aiken, 2012).

3. Methodology

Our purpose in this research is to find if there is a relationship between the wellbeing at work of nurses in Lebanese hospitals and their quality nursing care. We decided to use the quantitative method and execute the data analysis using the SPSS software. Our sample consists of 160 nurses from 23 hospitals in Lebanon. The wellbeing at work score of each nurse is measured by 17 independent variables (X_i). On the other hand, the unique dependent variable (Y) measures the quality nursing care of a nurse. This score is provided by the hospital administration (HR department or nursing department).

Our study is a correlational study where we will see the correlation between the wellbeing at work and the quality nursing care of nurses at Lebanese hospitals. It is a quantitative study as well.

3.1 Measurement tool
3.1.1 Measuring wellbeing at work
In our study, we will use the Nursing Workplace Satisfaction Questionnaire (NWSQ) (Fairbrother, 2010) to measure the level of wellbeing at work of nurses in Lebanese hospitals.

3.1.2 Measuring patient quality nursing care

To measure the quality nursing care of patients, we relied on the data given by the HR department of the various hospitals. All hospitals in our sample do regular evaluation for their nursing staff that includes quality nursing care. After filling the questionnaire of wellbeing at work by nurses, we in our turn, sent the list of names of nurses that filled the questionnaire to the HR managers in which they provided us with a score on 10 for each nurse. This score measures the quality nursing care of the nurse.

3.2 Statistical methods

In our research, we used the quantitative method to analyze the data collected through questionnaires. The quantitative method focuses on gathering numerical data and generalizing it across groups of people to explain a particular phenomenon.

Our research is a correlational study where we will see the correlation between the wellbeing at work and the quality nursing care of nurses at Lebanese hospitals.

All data analysis is performed using IBM-SPSS 23rd edition. The interval scale of measurement will be used. A score of "1" represents the lowest value while the score of "5" represents the highest value and score "3" is the mid value.

We will determine the coefficient of correlation between the variables, and that will allow us to conduct many inferential statistical analyses like the *t*-test, *F*-test, and all regression analyses.

Second, we will run the stepwise regression analysis to screen out unimportant variables, and finally, we will use a dimensionality reduction technique called the factor analysis (FA) method based on principal components (PC) in order to simplify the dimensions of our problem.

3.3 Data preparation

The first step in any data analysis is to clean the data first and handling missing data. After checking the data for any error, we noticed that there were few missing data. We had the choice to disregard the missing data or to replace it with other value. In our case, we disregarded the missing values. SPSS can handle missing values.

3.4 Research ethics

During our research, we considered few guidelines that we think they are universally accepted as moral and/or ethical. The British Psychological Society (BPS) has produced these guidelines and they are available online; they relate to human and animal subjects. The Lebanese University is becoming more and more cautious about the nature of research carried out under its name. Here are the major ethical points that we respected:

1. Sampling

We obtained approval from the different hospitals before passing the questionnaire to all the nurses. We also prepared the questionnaire to be short and straight forward; taking into account not to disrupt the normal functioning of nurses during their work at the hospital.

2. Apparatus

In order to understand better the questionnaire, we designed simple, short, and clear questions for nurses. Moreover, we translated to Arabic these questions to make it easier for nurses that are not English educated.

We checked the validity and reliability of the questionnaire.

3. Procedure

The participation in this study from the nurses' side was voluntary. All the nurses were aware of this research. The data collected are confidential.

4. Results and discussion

In this paragraph, we will write the different results of our research and we will interpret them. We start by a descriptive analysis of the data, then we will check whether there is a linear regression between the dependent variable Y (the performance of the nurse) and the different independent variables X4, X5, … X20 (the wellbeing at work of the nurse). Second, we will run the stepwise regression analysis to screen out unimportant variables, and finally, we will use a dimensionality reduction technique called the factor analysis (FA) method based on principal components (PC) in order to simplify the dimensions of our problem, to check whether we can reduce the number of variables X.

Here is the list of questions that is sent to nurses:

1) Gender ☐ Male   ☐ Female
2) Age: ☐ Between 20 and 30, ☐ Between 30 and 40, ☐ Between 40 and 50, ☐ Above 50
3) Hospital type: ☐ Public hospital ☐ Private hospital

"Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly agree (SA)"

4) My job gives me a lot of satisfaction
5) My job is very meaningful for me

6) I am enthusiastic about my present work
7) My work gives me an opportunity to show what I'm worth
8) In the last year, my work has grown more interesting
9) It's worthwhile to make an effort in my job
10) I have enough time to deliver good care to patients
11) I have enough opportunity to discuss patient problems with colleagues
12) I have enough support from colleagues
13) I function well on a busy shift
14) I am able to learn from my job
15) I do not feel isolated from my colleagues at work
16) I feel confident as a nurse
17) It's possible for me to make friends among my colleagues
18) I like my colleagues
19) I feel that I belong to a team
20) I feel that my colleagues like me

4.1 Descriptive statistics

For the first three questions of our questionnaire, here are the results:

1) For the first question Q1, where we asked about the gender of the nurse, the results were as shown in the following pie chart:
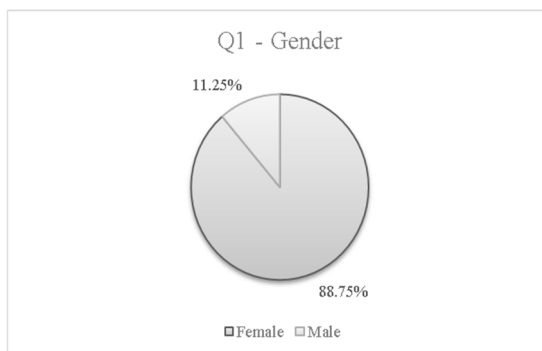

Figure 1. Pie chart for the gender distribution of the nurses

2) For the second question Q2, where we asked about the age of the nurse, the results were as shown in the following pie chart:
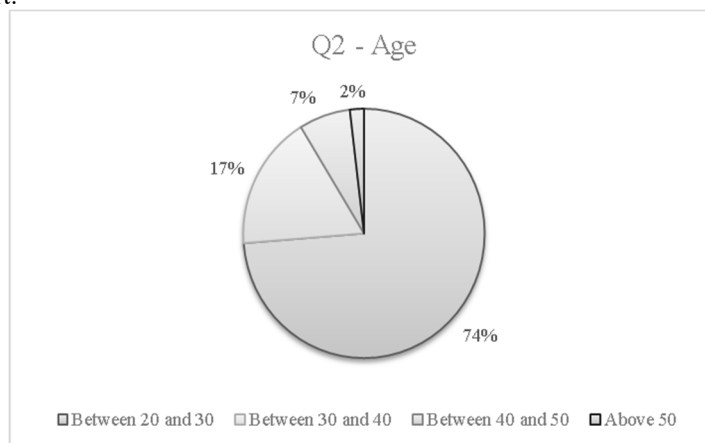

Figure 2. Pie chart for the age distribution of the nurses

3) For the third question Q3, where we asked about the hospital type, the results were as shown in the following pie chart:
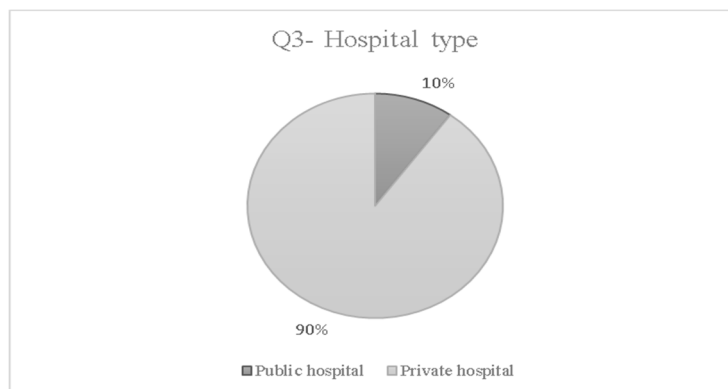
Figure 3. Pie chart for the hospital type distribution

The following table lists the descriptive statistics of all independent variables X (X4, X5, … , X20) and dependent variable Y:

Table 1. Descriptive statistics

Variables	Mean	Median	Mode	St Dev	Kurtosis	Skewness	Range	Min	Max	Sum	N
X4	2.92	3	3	1.16	-0.82	-0.23	4	1	5	467	160
X5	3.48	4	4	1.21	-0.58	-0.50	4	1	5	557	160
X6	3.20	3	4	1.24	-0.95	-0.27	4	1	5	512	160
X7	3.17	3	4	1.37	-1.22	-0.24	4	1	5	507	160
X8	3.02	3	4	1.36	-1.33	-0.17	4	1	5	483	160
X9	3.46	4	3	1.23	-0.66	-0.44	4	1	5	553	160
X10	2.86	3	2	1.20	-1.08	0.04	4	1	5	457	160
X11	2.70	3	3	1.17	-0.85	0.13	4	1	5	432	160
X12	2.66	3	4	1.17	-1.21	-0.01	4	1	5	425	160
X13	3.56	4	4	1.18	-0.06	-0.78	4	1	5	569	160
X14	3.65	4	4	1.33	-0.50	-0.87	4	1	5	584	160
X15	3.55	4	4	1.14	-0.36	-0.63	4	1	5	568	160
X16	3.99	4	5	1.05	-0.68	-0.73	3	2	5	638	160
X17	3.61	4	4	1.33	-0.37	-0.86	4	1	5	578	160
X18	3.38	4	4	1.23	-0.51	-0.72	4	1	5	541	160
X19	3.41	4	4	1.29	-0.74	-0.65	4	1	5	545	160
X20	3.41	4	4	1.18	-0.05	-0.78	4	1	5	546	160
Y	7.34	8	8	1.21	-0.92	-0.27	5	4	9	1174	160

To better see the range of values for all variables X and variable Y, we will draw the box plot for all of them in the following figure:
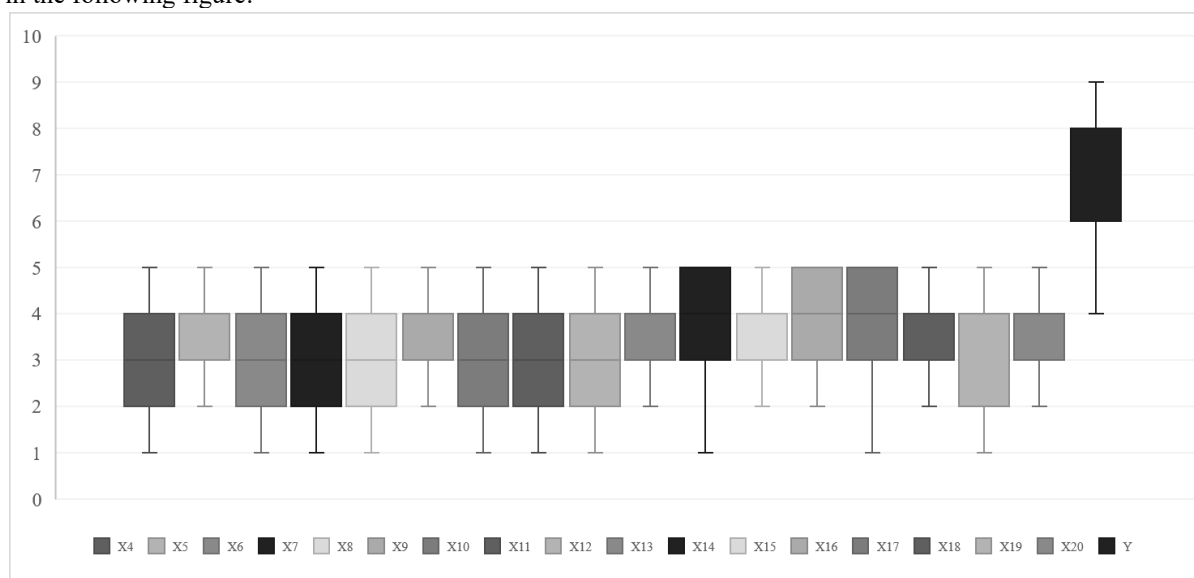

Figure 4. Box plots for all variables

We can clearly see from the box plots that the answers of questions Q4, Q6, Q7, Q8, Q10, Q11, Q12, Q14, Q17, and Q19 range from 1 to 5, whereas the answers of the other questions ranged from 2 to 5.

As for the Y values which is the performance score of the nurses provided to us by the hospital administration, they all range between 4 and 9. The mean is 7.34. Maybe this is an expected result; otherwise, the nurse would not be working anymore in the hospital if he/she has a low score.

4.2 Multiple regression model

In this section, we try to find how the dependent variable Y is related to 17 independent variables ($X4, X5 \ldots X20$). Though the questionnaire contained 20 questions, we disregarded the first 3 because they were qualitative variables (gender, age, and hospital type).

Our regression model is of the following form:

$Y = a_0 + a_4 X4 + a_5 X5 + a_6 X6 + \ldots + a_{20} X20$

All a are parameters.

Using the output from SPSS, we were able to find all parameters "a" for this model:

$Y = 4.546 + 0.206X4 + 0.068X5 - 0.13X6 + 0.095X7 + 0.281X8 - 0.007X9 + 0.064X10 + 0.084X11 + 0.116X12 - 0.115X13 - 0.016X14 + 0.177X15 + 0.035X16 + 0.066X17 - 0.036X18 - 0.07X19 + 0.104X20$

4.2.1 Testing for significance using the F test

We should note that the *F* test check for an overall significance of the relationship (Anderson, 2010). At a level of significance = 0.05, we showed that there is a significant relationship between Y (the performance of the nurse) and the set of independent variables X4, X5, … X20 (the wellbeing at work of the nurse).

4.2.2 Testing for significance using the t test

The *t* test is used to determine whether each of the individual independent variables is significant. In our case, there was a strong correlation among the independent variables. This is referred to multi-collinearity.

4.2.3 Heatmap chart

The following table is a heatmap chart for the coefficient of correlations r between the all the different variables:

	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	Y
X4	1.00																	
X5	0.76	1.00																
X6	0.67	0.61	1.00															
X7	0.55	0.44	0.72	1.00														
X8	0.64	0.55	0.83	0.83	1.00													
X9	0.72	0.58	0.74	0.61	0.69	1.00												
X10	0.54	0.45	0.41	0.48	0.43	0.52	1.00											
X11	0.35	0.51	0.36	0.36	0.35	0.27	0.64	1.00										
X12	0.52	0.57	0.39	0.40	0.49	0.41	0.54	0.62	1.00									
X13	0.60	0.62	0.61	0.41	0.59	0.57	0.42	0.36	0.47	1.00								
X14	0.51	0.47	0.66	0.59	0.67	0.70	0.51	0.41	0.53	0.55	1.00							
X15	0.41	0.40	0.52	0.45	0.56	0.59	0.39	0.47	0.53	0.61	0.62	1.00						
X16	0.42	0.28	0.42	0.64	0.58	0.31	0.32	0.17	0.32	0.31	0.38	0.33	1.00					
X17	0.15	0.12	0.30	0.61	0.49	0.28	0.32	0.23	0.37	0.20	0.51	0.35	0.69	1.00				
X18	0.46	0.47	0.67	0.58	0.71	0.59	0.38	0.42	0.59	0.52	0.79	0.66	0.51	0.58	1.00			
X19	0.40	0.40	0.65	0.66	0.72	0.63	0.43	0.41	0.53	0.50	0.76	0.66	0.39	0.62	0.80	1.00		
X20	0.30	0.34	0.60	0.42	0.56	0.51	0.16	0.30	0.38	0.47	0.74	0.57	0.22	0.39	0.67	0.74	1.00	
Y	0.53	0.48	0.50	0.57	0.61	0.49	0.45	0.43	0.52	0.41	0.50	0.48	0.43	0.39	0.51	0.50	0.38	1.00

Figure 5. Heatmap chart for the data

For example*, X8* and *X6* are highly correlated (r = 0.83), *X8* and *X7* are highly correlated (r = 0.83), *X9* and *X6* are highly correlated (r = 0.74), etc.

From the heatmap chart, it is clear that most of the variables are intercorrelated this explains the results of the *t* test.

In the next paragraph, we will use the stepwise regression analysis in order to find the most important variables and to screen out those that are not very important.

4.3 Stepwise regression analysis

In building our model to describe the response variable *Y*, we must choose the most important independent variables *X* to be included in the regression model. Moreover, we need to determine those that are not that important. To do this we will use what we call the stepwise regression analysis. Using SPSS, the stepwise regression analysis proposed a model using a constant, variable X8, and variable X12 only (significance 0.05).

Based on the results of this previous table, we can write the new regression linear model:

Y = 5.285 + 0.415X8 + 0.301X12

Again, we test the significance of this new model:

It is clear for the stepwise regression analysis that the most important variables of our original set of 17 variables were *X8* and *X12*. This is not a surprise for us because in our heatmap chart, we noticed that the correlation between *X8* and *Y* is the strongest with coefficient of correlation r = 0.61. Even the correlation between X12 and Y was strong with r = 0.52.

In the next paragraph, we describe a method that can reduce the number of variables while trying to keep the explanatory power of the completely original set of variables, the factor analysis method.

4.4 Factor analysis

The factor analysis method (FA) is a useful procedure for reducing the number of predicators in the model by analyzing the independent variables (Shmueli, 2010). It tells us whether the data observed, can be explained by a smaller number of uncorrelated factors or latent variables. We assume that the data comes from some underlying data source that are not directly known. Our target in factor analysis is to find those independent factors. This method is commonly used in psychology and other social sciences (Marsland, 2009).

We run factor analysis using SPSS. The method of factor extraction used is principal components; the extraction is based on eigenvalues greater than 1. We based our calculations on the correlation matrix. The rotation technique is the direct Oblimin.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = 0.875 (greater or equal to 0.6) and the Bartlett's Test of Sphericity value is significant (Sig. = 0.05) then we can say that our data is suitable for factor analysis (Pallant, 2016).

Another way to check if our data is suitable for factor analysis is to look at the heatmap chart for the coefficients of correlation r. Many values are greater than 0.3 (Pallant, 2016).

To determine how many components or factors to extract from our data, we need to look at the following table provided by SPSS:

Table 2. Eigenvalues extraction and percentage of variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.189	54.054	54.054	9.189	54.054	54.054	6.446
2	1.692	9.953	64.007	1.692	9.953	64.007	4.613
3	1.272	7.485	71.492	1.272	7.485	71.492	5.933
4	1.231	7.240	78.732	1.231	7.240	78.732	4.645
5	.656	3.857	82.590				
6	.547	3.218	85.808				
7	.482	2.837	88.645				
8	.376	2.210	90.855				
9	.309	1.818	92.673				
10	.268	1.576	94.249				
11	.238	1.403	95.652				
12	.172	1.013	96.665				
13	.146	.856	97.521				
14	.133	.783	98.304				
15	.113	.662	98.966				
16	.100	.586	99.552				
17	.076	.448	100.000				
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

All components that have eigenvalues greater or equal to 1 should be retained. In our case, the first four components are selected. These four components recorded eigenvalues above 1 (9.189, 1.692, 1.272, 1.231). These four components explain 78.73% of the variance (see Cumulative percentage column).

Another way to extract the most important components is took at the following chart provided by SPSS:
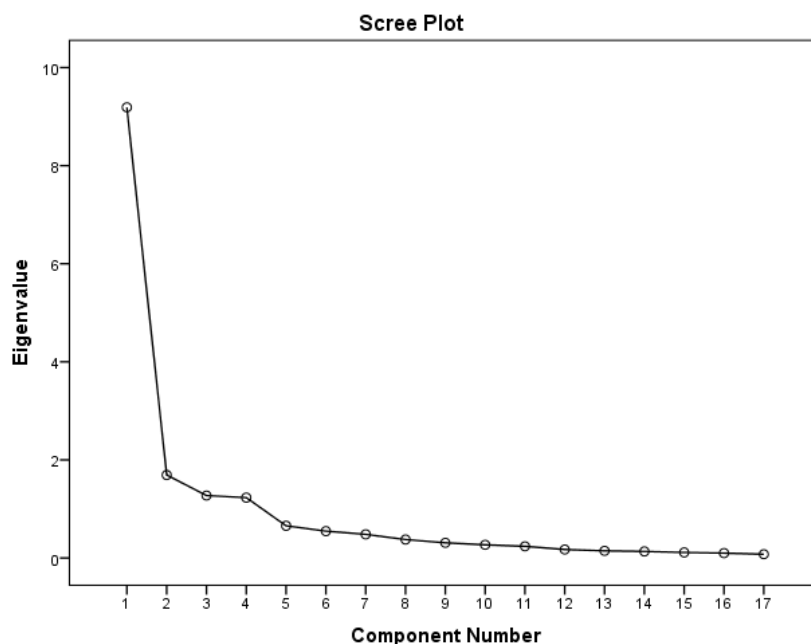
Figure 6. The eigenvalues sorted in descending order

It is clear from the plot that the first 4 components are retained. Notice that the vertical axis shows the eigenvalues and that we have chosen the components that have their eigenvalues greater than 1.

The final table we need to look at is the component matrix table shown next:

Table 3. Component matrix

	1	2	3	4
X8	.872			
X14	.845			
X18	.843			
X19	.838			
X6	.834			
X9	.797			
X7	.789			
X15	.735			
X4	.727	.430		-.377
X13	.712			
X5	.688	.515		
X20	.687		-.493	
X12	.687			.373
X10	.623	.327	.439	
X16	.574	-.390	.483	-.305
X11	.562	.359	.315	.511
X17	.570	-.631	.379	
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

This table shows the unrotated loadings of each of the items on the four components. SPSS uses the Kaiser criterion (retain all components with eigenvalues above 1) as the default. You will see from this table that most of the items load quite strongly (above 0.5) on the first component, above 0.3 on the second, third and fourth component, suggesting that a four-factor solution is appropriate in this case.

Again, the choice of 4 factors is shown in the pattern matrix shown in the next table where we have removed the loadings that are less than 0.4.

Table 4. Pattern matrix

	Component			
	1	2	3	4
X20	.955			
X19	.738			
X14	.678			
X18	.655			
X15	.643			
X16		-.897		
X17		-.826		
X7		-.661		
X4			.866	
X5			.707	
X9			.673	
X6			.669	
X13			.564	
X8			.504	
X11				.906
X12				.727
X10				.719
Extraction Method: Principal Component Analysis.				
Rotation Method: Oblimin with Kaiser Normalization.				
a. Rotation converged in 22 iterations.				

Again it is clear from the previous table that the items loadings on the four factors with 9 items loading above .3 on Component 1, 4 items loading on Component 2, 8 items on Component 3 and 4 items loading on Component 4.

To summarize the factor analysis, the method revealed the presence of four components with eigenvalues exceeding 1, explaining 54.06%, 9.96%, 7.49%, and 7.24% of the variance respectively. An inspection of the screeplot revealed a clear break after the fourth component.

Let us interpret the results of the pattern matrix keeping only loadings greater than 0.4.

1. From the first principal component PC1, we can see that this component loads very well on X20, X19, X14, X18, and X15. If we look at the corresponding questions of these variables, we can see that they all relate to the team that the nurse belongs in his/her work. How satisfied he/she is about working in a team.
2. From the second principal component PC2, we can see that this component loads very well on X7, X16, and X17. If we look at the corresponding questions of these variables, we might consider that this relates to the nurse's self –image and how satisfied he/she is about that.
3. From the third principal component PC3, we can see that this component loads very well on X4, X5, X9, X6, X13, and X8. If we look at the corresponding questions of these variables, we might consider that this relates to the nurse's wellbeing at work, and how satisfied he/she is about that.
4. From the fourth principal component PC4, we can see that this component loads very well on X11, X12, and X10. If we look at the corresponding questions of these variables, we might consider that this relates to the nurse's way of doing her work, and how satisfied he/she is about that.

At the end of this factor analysis, it is a good idea to propose a new set of 4 components let's call them: working effectively in a team, Self-image satisfaction, Job satisfaction, and work Performance: Team, Self, Job, Work (TSJW). The big 4 components of the nurse's satisfaction at the workplace.

5. Conclusion and recommendation

In conclusion, the objective of our research was to study the phenomenon of well-being - performance of nurses in hospitals in Lebanon. Our goal was to see whether there is a correlation between the quality nursing care, which is one indicator of performance and wellbeing at work, which is one factor of well-being of nurses. The literature review shows that these two are correlated. Our survey on 160 nurses from 23 hospitals demonstrated the hypothesis. The patient satisfaction in hospitals is dependent on the nurses' job satisfaction.

Using the *F* test, we have accepted the hypothesis that these variables are correlated. Thus, we proved that the wellbeing at work of a nurse is correlated with his/her quality nursing care. Therefore, from now on, we can predict the quality care provided by a nurse from his/her job satisfaction.

Moreover, the factor analysis technique was used to reduce the number of variables related to the wellbeing at work of nurses where we focused on the first 4 principle components that we called (TSJW).

Hopefully, in the future, these 4 factors will be used to test the wellbeing at work of nurses at hospitals.

Based on the results of this research, we can recommend the following points:

1. Since we found that the patient satisfaction is dependent on the wellbeing at work of the nurses, it will be a good idea to find ways trying to improve the wellbeing at work of the nurses. For example:
- To assign a psychologist dedicated for the nurses not just a HR department.
- To adjust work schedule of nurses in order to get a better balanced family-work life.
- To give nurses more autonomy.
- To create a quiet room for nurses to meditate, to relax, to do yoga, or even a small wellness center inside each hospital dedicated for the nurses.
- To apply job rotation for nurses in different departments that will motivate them more.
- To let nurses enroll in happiness and positivity trainings.

2. Since the nurse profession in Lebanon is not respected, undervalued and underappreciated, we should create some awareness campaigns to change this fact. Maybe this would be a task for the order of nurses.

3. Improve the working conditions of nurses: creating lockers for them, setting better heaters and ACs, improving the hygiene conditions, etc.

4. The government should help nurses more by supporting them financially or morally.

5. In order for the nurses to have more time to deliver good care to patients, we ought to increase the staff number.

6. In order for nurses to have enough opportunity to discuss patient problems with their colleagues, we ought to give them more breaks in their work shifts.

7. Since nurses do not feel that they have full support from their colleagues, we might provide them with team building trainings and create an atmosphere in the workplace that encourages the work in a team.

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