Relationship between mental health of nursing students and coping, self-esteem and social support

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A B S T R A C T

Aim: The aim of this study was to investigate the relationship between the mental health of Turkish nursing students and the stress experienced during their education, their ways of coping, self-esteem, social support and individual factors.

Background: Studies on nursing students have shown that students who were not in possession of effective coping strategies were at risk of presenting psychiatric symptoms when under stressful conditions.

Methods: This was a cross-sectional, case-control study. The sample consisted of 516 nursing students who were studying in an undergraduate program in Turkey. Participants provided data on sociodemographic characteristics by completing the Nursing Education Stress Scale, Coping Behavior Inventory for Nursing Students, Multidimensional Scale of Perceived Social Support, Rosenberg Self-Esteem Scale, and the General Health Questionnaire.

Results: The main factors which were considered to affect the mental health of nursing students, including "total stress" and "self-esteem" scores, "general health" evaluation, "satisfaction with school life" and "presence of a negative event within the last year", were included in all models of the General Health Questionnaire analysis.

Analysis of the data indicated that these factors had strong relationship with mental health of the nursing students.

Discussion: It is recommended that the mental health of students be monitored throughout the nursing education period and that preventive practices should be established in order to forestall mental health problems amongst nursing students.

Conclusion: The stress levels of nursing students should be monitored in order to facilitate their ability to cope with stressful situations during their training, and components for coping with stress should be included in the curricula of nursing departments.

1. Introductıon

Nursing students cope with the same problems as other young university students in addition to the difficulties of being in the field of healthcare (Karadağ et al., 2008). Nursing students also experience traumatic events such as death and are witness to dying patients from the first moments of their educational training (Sheu et al., 2002). Mental health problems of nursing students in Turkey are borderline to high compared to other university students and to the general population (Beşer and İnci, 2010; Yildirim et al., 2008). Previous studies have shown that mental problems of nursing students are associated with self-esteem, stress and coping skills (Edwards et al., 2010; Sheu et al., 2002). Positive self-esteem enables students to cope with

problems more effectively and is effective in the protection of their mental health. It has been observed that social support has a positive effect on coping with stress and thus, in the safeguarding of mental health (Luo and Wang, 2009; Reeve et al., 2013).

2. Background

Studies on nursing students have shown that students who were not in possession of effective coping strategies were at risk of presenting psychiatric symptoms when under stressful conditions (Chan et al., 2009; Guler and Cinar, 2010; Lo, 2002; Sheu et al., 2002). The mental health of nursing students is also negatively affected by some individual factors of their own (Ni et al., 2010). In previous studies carried out on

this subject in Turkey, it was found that some individual factors such as negative life events experienced within the last year, existing physical and psychiatric diseases, their state of satisfaction with school life, insufficient financial status and living away from their family negatively affected mental health (Dinç Hür et al., 2014; Karadağ et al., 2008; Yildirim et al., 2008). To date, no study has been conducted in Turkey evaluating the many variables such as self-esteem, social support, stress and stress-coping skills together in order to determine how these factors generate a risk to their mental health.

The aim of this study was to investigate the relationship between the mental health of nursing students and the stress experienced during their education, their ways of coping, self-esteem, social support and individual factors. It was designed with the view that the best way of controlling mental health problems is to determine "student-specific risks".

3. Methods

3.1. Study Design

This was a cross-sectional, case-control study. Students were classified into two groups, one having high and the other low General Health Questionnaire (GHQ) scores. According to GHQ by taking the cut-off value as 5, two groups were generated, one having high scores (≥ 5) and the other having low scores (< 5) (Kilic, 1996).

All data were collected in May 2015.

3.2. Sample Groups/Participants

Participants included nursing students within a four-year educational program in the Department of Nursing at Duzce University in Düzce, Turkey. All 580 nursing students who were studying in the university during the 2014–2015 academic year were eligible to participate in the study. The study sample included 516 nursing students who filled out the data forms completely (response rate = 88%).

4. Data Collection

The students were given a self-evaluation questionnaire. Students were contacted for participation in the study outside of class times and they were informed about the aim of the study. Students were also told that their participation was on a voluntary basis. Additionally, in order to maintain confidentiality and anonymity, participants did not write their names on the questionnaire form. Questionnaires were completed within approximately 25 min.

4.1. Data Collection Tools

The dependent variable of the study was the General Health Questionnaire (GHQ). The independent variables were the demographic characteristics, Nursing Education Stress Scale (NESS), Coping Behavior Inventory (CBI), Multidimensional Scale of Perceived Social Support (MSPSS), and Rosenberg Self-Esteem Scale (RSES).

4.1.1. Demographic Characteristics Form

The demographic characteristics form was created by the researchers and consisted of questions about individual socio-demographic characteristics such as age, sex, and family structure.

4.1.2. Nursing Education Stress Scale

Participants completed the Nursing Education Stress Scale (NESS) form (Rhead, 1995) which is a modified version of the Nursing Stress Scale (Gray-Toft and Anderson, 1981). This scale was translated into the Turkish language by the researchers. NESS is a 4-point Likert-type scale consisting of 32 items and 2 subscales. After a Turkish adaptation of the scale was done using a back-translation method, exploratory and

confirmatory factor analyses were used for validity and internal consistency. Several analyses including Cronbach's alpha coefficient, the total item correlation, the intraclass reliability correlation coefficient, the Kappa coefficient, and the correlation coefficient were used for the reliability of the scale. The Kaiser-Meyer-Olkin value was 0.93. The Chi-square value was significant according to our Bartlett sphericity test results ($\chi^2(774) = 7050,137$; $p < 0.001$). The total variance, explained by two factors which had an eigenvalue above 1, was 32.27%. The factor load values of the scale items had values of 0.33 and above. According to our confirmatory factor analysis, the error variances of the variables had values of 0.88 and below, and there were no high error variances. The Cronbach's alpha reliability coefficients were between 0.81 and 0.93, the intraclass correlation coefficients of the scale and subscales were 0.76 and above, and the total item score correlation coefficients were 0.30 and above. The scale also included the two subscales of clinical stress and academic stress. Higher scores represented higher stress levels (Karaca et al., 2014).

4.1.3. Coping Behavior Inventory for Nursing Students

The Coping Behavior Inventory (CBI) for nursing students was developed by Sheu et al. (2002) and consists of 19 items. This scale is divided into four subscales. The researchers translated the original scale into Turkish. After this Turkish translation was complete, exploratory and confirmatory factor analyses for its validity, as well as internal consistency analyses for its reliability, were used. According to our Bartlett test result, the Chi-square value was significant. The Cronbach's alpha coefficients of the CBI were 0.04–0.40. The scale had four subscales: optimistic behavior, transference behavior, problem-solving behavior, and avoidance coping. Participants responded to items using a 5-point Likert scale. A high score for any factor indicated that a specific coping method was more frequently used (Karaca et al., 2015).

4.1.4. Multidimensional Scale of Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS) was originally developed by Zimet et al. in 1988. Eker and Arkar (1995) carried out studies using a Turkish adaptation of the scale, and its reliability and validity were evaluated by Eker et al. (2001). The exploratory factor analyses were done with the Kaiser-Meyer-Olkin Measure and Bartlett's Chi-square tests. According to the Bartlett test, the Chi-square value obtained was significant. The Cronbach's alpha value of the scale was found to be 0.93. The MSPSS consists of 12 items including subjective evaluation of the perceived sufficiency of social support from three sources (family, friends, and significant others). A higher score on the scale indicated a higher perceived social support (Eker et al., 2001).

4.1.5. Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES) is a self-assessment instrument that consists of 63 multiple-choice questions. It was developed by Rosenberg (1965) for the purpose of measuring self-esteem by using the first 10 items of the scale. Cuhadaroglu (1986) conducted an assessment of the reliability and validity of the scale in Turkey. The general validity of the scale was found to be 71%. Self-respect was found to be 75% in the reliability studies. Students who scored between 0 and 1 points on the self-esteem subscale were classified as high, 2–4 points as moderate, and 5–6 points as low (Cuhadaroglu, 1986).

4.1.6. General Health Questionnaire

The General Health Questionnaire (GHQ) was developed by Goldberg in 1972 (Goldberg and Hillier, 1979). Kilic carried out a validity and reliability study of the Turkish version of the GHQ in 1996. The Cronbach's alpha value of the scale was 0.78. Individuals who obtained a score of 4 or less were categorized as having "normal" mental health, while those who scored 5 or more were classified as a "risk group for mental problems" (Kilic, 1996).

4.2. Statistical Analysis

All statistical analyses were performed using the IBM SPSS 22 program. Descriptive statistics of all variables (mean, standard deviation, median, minimum, maximum, percentage) were calculated in the study. The normality assumptions of continuous variables were checked by the Kolmogorov-Smirnov test. The independent-samples *t*-test and Mann-Whitney *U* test were used for group comparisons. Correlations between categorical variables were determined by the Pearson chi-square and Fisher-Freeman-Halton tests. Multiple binary logistic regression analysis was used to determine the factors affecting mental health. The compliance of the data to the model was analyzed via the Hosmer-Lemeshow test, for which $p < 0.05$ was considered as statistically significant. According to GHQ by taking the cut-off value as 5, two groups were generated, one having high scores (≥ 5) and the other having low scores (< 5).

4.3. Ethical Considerations

The study was approved by the D. University Directorate of the Health School and ethical consent was obtained from the D. University Ethics Committee (Approval number: 2015/14). Participating students were provided written and verbal information about the study aim and methods, and were informed of the voluntary nature of their contributions. The structural equation modeling approach was used with some parts of the data in this study on the links between the health status of Turkish nursing students and their stress during training, stress management, self-esteem and social support (Yıldırım et al., 2017). Students who experienced high levels of stress were directed to the psychological counseling and guidance unit at the end of the study.

5. Results

The mean score of the students on the GHQ was 6.44 ± 6.68 (median: 4, min-max: 0–28). Based on their scores from the GHQ, the relevant students were divided into two groups, one having low scores (< 5 points) and the other high scores (≥ 5 points).

The participating students were aged 18–35 years (mean: 20.40 ± 1.88). No significant difference was found between the groups ($p = 0.522$). The sociodemographic characteristics of the students are given in detail in Table 1.

There was no statistically significant difference between the two groups in terms of sex, class year, chronic disease and previous psychiatric disease (Table 1), while a significant difference was found between the groups in terms of the person with whom private problems were shared ($p < 0.001$). In the high-score group, the proportion of students who replied "I do not share" as well as "I share with my friends" was significantly higher than the proportion in the low-score group ($p < 0.001$). The percentage of students who responded "I share with my family" was significantly higher ($p < 0.001$) in the low-score group.

There was a significant difference in the mental health status of the groups based on the state of satisfaction with school life ($p < 0.001$). The percentage of students who were satisfied with school life in the low-score group was significantly higher than in the high-score group.

Based on the question of choosing nursing voluntarily, a statistically significant difference was detected between the two groups ($p = 0.026$). A significantly lower percentage of students responded positively in the high-score group than in the low-score group.

Based on academic success, a significant difference was found between the groups ($p = 0.001$). In the high-score group, the percentage of students with a "low" level of academic success was higher than that of the other group. Moreover, the percentage of students with a "high" level of academic success was significantly higher in the low-score group.

There was also a significant difference between the groups in terms

Table 1
Student sociodemographic characteristics.

Based on the score from the General Health Questionnaire			
	Low score (< 5)	High score (≥ 5)	*p*
Sex			
Male	55 (55.6%)	44 (44.4%)	0.264
Female	204 (49.0%)	212 (51.0%)	
Class year			
First year	83 (48.0%)	90 (52.0%)	0.503
Second year	93 (48.4%)	99 (51.6%)	
Third year	93 (56.1%)	36 (43.9%)	
Fourth year	38 (55.1%)	31 (44.9%)	
The person with whom private problems are shared			
I do not share	16 (33.3%)	32 (66.7%)	< 0.001
Family	131 (59.0%)	91 (41.0%)	
Friends	69 (41.8%)	96 (58.2%)	
Healthcare professionals	1 (100.0%)	0	
Close friends	0	2 (100.0%)	
People with whom I feel happy	0	1 (100.0%)	
Partner	3 (100.0%)	0	
Spouse	1 (100.0%)	0	
Satisfaction with school life			
I am satisfied	199 (59.6%)	135 (40.4%)	< 0.001
I am not satisfied	60 (33.5%)	119 (66.5%)	
Nursing as a voluntary study choice			
Yes	212 (53.3%)	186 (46.7%)	0.026
No	47 (41.2%)	67 (58.8%)	
Academic success			
Low	13 (28.3%)	33 (71.7%)	0.001
Moderate	211 (51.2%)	201 (48.8%)	
High	36 (64.3%)	20 (35.7%)	
State of health in general			
Very good	23 (76.7%)	7 (23.3%)	< 0.001
Good	198 (59.8%)	133 (40.2%)	
Moderate	36 (25.5%)	105 (74.5%)	
Poor	1 (9.1%)	10 (90.9%)	
Chronic disease			
No	229 (50.9%)	221 (49.1%)	0.599
Yes	31 (47.0%)	35 (53.0%)	
Previous psychiatric disease			
No	255 (51.0%)	245 (49.0%)	0.071
Yes	4 (26.7%)	11 (73.3%)	
A negative event experienced within the last year			
No	218 (57.1%)	164 (42.9%)	< 0.001
Yes	41 (31.3%)	90 (68.7%)	
Maternal attention			
Very good	181 (53.9%)	155 (46.1%)	0.022
Good	67 (45.6%)	80 (54.4%)	
Moderate	8 (30.8%)	18 (69.2%)	
Poor	0	2 (100.0%)	
Very poor	0	1 (100.0%)	
Paternal attention			
Very good	153 (56.3%)	119 (43.8%)	0.006
Good	78 (49.7%)	79 (50.3%)	
Moderate	20 (35.7%)	36 (64.3%)	
Poor	2 (22.2%)	7 (77.8%)	
Very poor	2 (22.2%)	7 (77.8%)	

of their general health ($p < 0.001$). In the high-score group, the percentage of students who evaluated their health as "very good" and "good" was lower compared to the other group.

Based on experiences of a negative event within the last year, there was a significant difference between the two mental health groups ($p < 0.001$). Based on experiences of a negative event within the last year, there was a significant difference between the two mental health groups ($p < 0.001$).

A statistically significant difference was found between the groups in terms of maternal attention ($p = 0.022$). A statistically significant difference was found between the groups in terms of maternal attention ($p = 0.022$). However, the percentage of the students who evaluated

Table 2
General Health Questionnaire total scale and subscale mean scores.

		Mental Health Questionnaire			
		< 5 (low score) n = 260	≥5 (high score) n = 256	Total	p
Nursing Education Stress Scale 1. Clinical stress subscale	Mean	47.61	51.01	49.30	< 0.001
	Std. Deviation	9.18	7.73	8.65	
	Median	48	52	50	
	Minimum	16	19	16	
	Maximum	64	64	64	
Nursing Education Stress Scale 2. Academic stress subscale	Mean	46.95	50.98	48.95	< 0.001
	Std. Deviation	8.74	7.45	8.37	
	Median	48	51	49	
	Minimum	16	16	16	
	Maximum	63	64	64	
Nursing Education Stress Scale Total score	Mean	94.56	101.99	98.24	< 0.001
	Std. Deviation	17.16	14.23	16.19	
	Median	96	103	99	
	Minimum	32	35	32	
	Maximum	125	128	128	
Coping Behavior Inventory 1. Remaining optimistic subscale	Mean	14.04	13.46	13.76	0.040
	Std. Deviation	2.42	2.73	2.59	
	Median	14	14	14	
	Minimum	8	5	5	
	Maximum	20	20	20	
Coping Behavior Inventory 2. Transfer subscale	Mean	10.22	9.66	9.95	0.025
	Std. Deviation	2.15	2.67	2.44	
	Median	10	10	10	
	Minimum	3	3	3	
	Maximum	15	15	15	
Coping Behavior Inventory 3. Problem solving subscale	Mean	23.00	21.55	22.28	0.001
	Std. Deviation	4.09	4.86	4.54	
	Median	23	22	22	
	Minimum	11	6	6	
	Maximum	30	30	30	
Coping Behavior Inventory 4. Avoidance subscale	Mean	13.43	15.28	14.35	< 0.001
	Std. Deviation	5.32	4.81	5.15	
	Median	13	15	14	
	Minimum	6	6	6	
	Maximum	30	30	30	
Multidimensional Scale of Perceived Social Support	Mean	67.73	62.44	65.10	< 0.001
	Std. Deviation	10.82	12.99	12.23	
	Median	69	62	65.5	
	Minimum	34	12	12	
	Maximum	84	84	84	
Rosenberg Self-Esteem Scale	Mean	23.35	19.24	21.31	< 0.001
	Std. Deviation	4.29	5.45	5.31	
	Median	24	19	22	
	Minimum	11	3	3	
	Maximum	30	30	30	

their mothers' attention as "very good" was significantly lower in the high-score group.

A statistically significant difference was found between the groups in terms of paternal attention ($p = 0.006$). In the high-score group, the percentage of students who evaluated their fathers' attention as "moderate" was significantly higher than in the other group. However, the percentage of students who evaluated their fathers' attention as "very good" was significantly lower in the high-score group.

Significant differences were detected between the groups based on all total scale and subscale scores (Table 2).

In the high-score group, median values of the clinical and academic stress subscales of the NESS, the total score from the NESS and the "Avoidance" subscale of the CBI were found to be significantly higher than in the other group. However, the median score values for "Remaining optimistic", "Transfer" and "Problem solving" subscales of the CBI, the MSPSS and the RSES were significantly lower in the high-score group compared to the low-score group.

It was found that the total stress score, total RSES, level of satisfaction with school life, general health self-evaluation and experience of a negative event within the last year affected mental health. The RSES measure appeared as a protective factor for the evaluation of mental health, while each of the other factors in the model was determined to be a risk factor (Table 3). Through this model, the accuracy assessment rate of 71.2% was found for the mental health of the students (as high- and low-score groups).

As the total stress score increased, the risk of being in the high-score group in terms of mental health increased 1.020-fold. As the total RSES score decreased, the risk of being in the high-score group decreased 0.864-fold. Thus, this factor was shown to have a protective role on mental health. For the students who were not satisfied with school life, the risk of being included in the high-score group was 1.875-fold more than for the ones who were satisfied with their school lives. For the ones who evaluated their health as "moderate" and "poor", the risks of being included in the high-score group in terms of mental health were 5.0159- and 13.683-fold more, respectively, than for the ones who evaluated their health as "very good". For the students who experienced a negative event within the last year, the risk of being included in the high-score group for mental health was 2.294-fold more than for the students

Table 3
Logistic Regression Model.

	B	SE	Wald-χ^2	p	OR	95% CI for OR	
						Lower	Upper
T. stress score	0.020	0.007	8.557	**0.003**	1.020	1.007	1.034
T.R. self-esteem score	−0.146	0.023	39.930	**< 0.001**	0.864	0.826	0.904
School life (not satisfied)	0.629	0.225	7.790	**0.005**	1.875	1.206	2.916
Health value			27.807	**< 0.001**			
Health value (good)	0.459	0.493	0.868	0.351	1.583	0.602	4.158
Health value (moderate)	1.641	0.522	9.868	**0.002**	5.159	1.853	14.360
Health value (poor)	2.616	1.292	4.102	**0.043**	13.683	1.088	172.031
Negative event (yes)	0.830	0.250	11.051	**0.001**	2.294	1.406	3.742
Constant	1.874	0.904	4.294	**0.038**	6.514		

Hosmer and Lemeshow Test $\chi^2 = 4.47$, $p = 0.814$.
Model fit $\chi^2 = 154.079$, $p < 0.001$.
OR: Odds Ratio, B: Regression coefficient, SE: Standard Error of Mean, CI: Confidence Interval.

who had not experienced a negative event within the last year.

6. Discussion

It is acknowledged that the mental state of nursing students is not at a desirable level in Turkey (Ilhan et al., 2014; Tezel et al., 2009). The mental distress scores of nursing students are higher than those of medical students or of the general female population (Tully, 2004). Therefore, in terms of prevention, it is important to determine the risk factors affecting the mental health of nursing students.

The following part of the study presents mental health risks in terms of the sociodemographic characteristics affecting the mental health of nursing students, and in terms of variables such as nursing education stress, coping skills, self-esteem and social support.

6.1. Mental Health Risks in Terms of Sociodemographic Characteristics

The results of the study showed that "voluntarily choosing the nursing branch" and "satisfaction with school life" were important factors for the mental health status of the students ($p = 0.026$, $p < 0.001$). Some studies evaluating the mental state of nursing students in Turkey have shown that these two variables were important determining factors on the mental well-being of students (Yildirim et al., 2008). A "profession" is defined as a tool that enables individuals to use their skills and to realize their existence. Individuals choose their professions voluntarily when they become psychologically and intellectually ready for professional life (Onler and Saracoglu, 2010). Therefore, it can be implied that career choice should be considered as an important factor in the mental health of an individual.

Another finding in this study was that students with low levels of academic success tended to be included in the high-score group, based on the state of their mental health ($p = 0.001$). This result shows that there is a relationship between academic success and mental health. Previous studies have also shown that the thinking and decision-making capabilities of students were impaired by high stress levels and thus, their academic success was decreased (Chan et al., 2009; Chapman and Orb, 2001; Maville et al., 2004).

In two separate analysis models, this study detected that the factors of their "health evaluation" and "experiencing a negative event within the last year" affected the students' mental health ($p < 0.001$). The students who had experienced a negative event within the previous year had a 2.29-fold higher risk of being in the high-score group based on their mental health status (GHQ score) than the ones who had not. This result showed that the long-term effects of emotional trauma from a negative event within the last year negatively affected the mental health of the students. Moreover, this study also showed that there was a relationship between the physical and mental health of the nursing students. It is noteworthy that students who evaluated their health as

"poor" were included in the high-risk group for mental health problems. Similarly, Ni et al. (2010), in their study with Chinese nursing students, found that physical health problems were significantly correlated with psychological disorders. In previous studies conducted in Turkey, it was found that nursing students with a chronic disease were reported as having psychological disorders such as depression and anxiety, negative self-perception and high stress levels (Deveci et al., 2013; Dinç Hür et al., 2014). Taking the relationship of the emergence of physical health problems with mental health problems into consideration, this variable should definitely be considered in preventive intervention studies to decrease mental health problems.

6.2. Mental Health Risks in Terms of Variables Such as Nursing Education Stress, Coping Skills, Self-Esteem and Social Support

In the study, it was found that total scores from NESS and scores from the academic and clinical subscales of the students in the high-GHQ score group were significantly higher compared to the low-score group ($p < 0.001$). No study has been carried out in Turkey evaluating the relationship between nursing education stress and psychological problems. However, it has been shown that nursing education stress appears to be an important risk factor in psychological health (Chan et al., 2009; Ni et al., 2010; Sheu et al., 2002). Previous studies have reported that long-term and uncontrolled stress had negatively affected the mental/physical health and academic success of nursing students (Ni et al., 2010; Reeve et al., 2013). These negative effects created by stress are directly associated with the sufficiency of individual coping behaviors (Sheu et al., 2002). Previous studies have also reported that the type of coping strategy can affect the physical and mental health of the individual; passive coping was correlated with negative effects and active coping and support mechanisms with positive effects on mental health (Benyamini et al., 2008). In the present study, students who were under high risk for mental problems were using an "avoidance" strategy (mean = 15.28). This finding showed that these students were at risk in terms of mental health. The results of studies performed with nursing students in China and Turkey similarly showed that the mental health of students who used passive coping strategies was at risk (Ni et al., 2010; Polat and Demir, 2014). In this study, the use of optimistic, problem solving and transfer coping strategies appeared to be a protective factor for mental health (mean = 14.04, 23.00 and 10.22, respectively). Therefore, support for improving stress-coping skills given to the students by their educators is quite important in terms of protecting their mental health.

In this study, it was determined in two separate analysis models that high self-esteem was a protective factor for mental health. As the total RSES of the students decreased, the risk of being included in the high-score group increased 0.864-fold. Similar findings of the study by Hamarta et al. (2009) showed that positive self-perception and the

seeking of social support were predictors in using effective coping strategies. Previous studies have indicated that high self-esteem increased the coping skills and decreased the mental health risks of nursing students (Edwards et al., 2010; Ni et al., 2010). The stress experienced by nurses during their education generates negative self-perception. Negative self-perception causes students to develop the belief that they cannot cope with their problems, and they subsequently experience psychological problems (Boey, 1999; Edwards et al., 2010). In conclusion, students must realize their self-worth, exhibit their skills, knowledge and capabilities and establish a positive professional identity.

The results of this study showed that students who perceived social support positively were at a low risk for mental health problems (mean = 67.73). This result concurs with the findings of previous studies (Terzi, 2008; Yildirim et al., 2008). The results of studies conducted in Turkey (Kapıkıran, 2013; Yalcin, 2014) showed a positive correlation between the well-being and psychological stability of students and social support (Kapıkıran, 2013; Yalcin, 2014). In the study by Harrison et al. (1999), it was observed that the presence or absence of a person with whom to share problems was associated with high or low GHQ scores. Lo (2002) reported that the main social support sources of nursing students were their families, spouses and partners. According to Baltas and Baltas (2004), sharing stress with others enables one to tolerate the stress more easily and thus, protects psychological health (Baltas and Baltas, 2004). In this study, the ratio of the students who responded "I share with my family" was significantly higher in the low-score group ($p < 0.001$), indicating that social support was a supporting factor in the preserving the mental health of the students.

7. Conclusions

In this study, the "total stress score", "self-esteem scale score", "evaluation of health", "satisfaction with school life" and "presence of a negative event within the last year" were taken as the main factors affecting the mental health of the nursing students and were included in all models of the GHQ analysis. This finding indicates that these factors have a strong impact on the mental health of nursing students. The nursing education students who scored high on the GHQ also had high levels of stress and used avoidance strategy more frequently. High self-esteem and the presence of social support are protective factors for the maintenance of mental health.

The stress levels of nursing students should be monitored in order to facilitate their ability to cope with stressful situations during their training, and components for coping with stress should be included in the curricula of nursing departments. Furthermore, programs that enhance the self-esteem of the students and increase their social support should be established. Randomized controlled studies should be conducted to assess the interventions implemented.

8. Limitations of the Study

This study was limited to Turkish nursing students. This study shows only the relationships between variables and does not show causality, because it was a correlational research study.

Conflict of Interest Statement

Conflicts of interest: none.

Author Contributions

Study design: KA, YN, CS, AF, AD.
Data collection: KA, YN, AF, AD.
Data analysis: CS.
Manuscript writing: KA, YN, CS, AF, AD.

Submission Declaration

This manuscript is not under consideration for publication elsewhere, its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and if accepted for publication, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder.

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