

Ethical Sensitivity Questionnaire for Turkish Nursing Students: A Methodologic Validity and Reliability Study

Abstract

Background: Nurses are expected to demonstrate a high level of ethical skills and respect the patient's rights and values.

Aim: This study aims to determine the validity and reliability of the Turkish version of the Ethical Sensitivity Questionnaire for Nursing Students.

Methods: This cross-sectional validity and reliability study was conducted in a private university. The total of 210 nursing students with clinical practice experience have participated in the study. Data were collected using an information form and an Ethical Sensitivity Questionnaire for Nursing Students.

Results: The language and content validity for the scale was found as 0.96. The factor analysis results revealed that the questionnaire has a three-dimensional structure as in its original form. Confirmatory factor analysis results was demonstrated acceptable fit indices. The confirmatory factor analysis results show a good fit of the model. The overall Cronbach's alpha coefficient was 0.80.

Conclusion: The Turkish version of the Ethical Sensitivity Questionnaire for Nursing Students is a valid and reliable tool. This scale can be used to evaluate ethical sensitivity level to create a chance for planning interventions to improve the ethical decision-making skills of student nurses.

Keywords: Ethics, nursing, reliability, students, validity

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Introduction

Ethics is a group of moral principles or a collection of values that regulate the behavior of a person or profession. In other words, ethics is a philosophical discipline that investigates the norms, values, rules, rights, and wrongs that constitute human relations from a moral perspective.^{1,2} Professional ethics, in which the rules, principles, standards, norms, and moral requirements of a particular profession are taken into account, regulates the behaviors of a person in their profession, gives direction on what should or should not be done in professional work, and makes judgments about the behavior of people. Ethical principles shape the health professional responsibilities toward sick and healthy individuals, family, and society, and complete quality care. Important ethical principles for nurses include respect, integrity, honesty, justice, reliability, non-maleficence, beneficence, respect for autonomy, and justice.^{2,3}

It is known that health professionals frequently encounter ethical problems due to various reasons in clinical practice. Health professionals provide care to sick individuals of different cultures, languages, religions, races, and ethnic backgrounds. During modern medicine and nursing practices, ethical problems can be encountered and individuals' values and beliefs can be effective in their solution. For this reason, the need to increase the level of ethical knowledge arises and the importance of the issue of ethics is increasing each day.^{2,4}

Nurses who care for sick individuals at the bedside are based on these principles and are attentive to their profession and patient rights. In addition to providing cooperation between nurses, physicians, and patients in clinical practice, nurses also advocate for their patients when the patient is defenseless.^{5,6} Nurses are expected to respect their patient's rights and values and demonstrate a high level of ethical sensitivity. For ethical decision-making, it is first necessary to determine whether the problem is an ethical

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dilemma. Different decision-making models are suggested for solving ethical problems.^{6,7} Patients and health professionals may come from different cultures, but nurses play a key role in the resolution of conflicting values and ethical problems that may arise.

Nursing students, as well as nurses, face complex and fraught ethical questions and dilemmas in the clinical field. To have the ability to solve an ethical dilemma, it is important and necessary to explain ethical issues and ethical sensitivity to students during courses such that they can gain the skills to solve them more professionally.⁸ Because ethical sensitivity includes recognizing an ethical problem, defending the patient's rights, especially the right to obtain information on disclosures of the patient's health information, and having the patient's medical records treated as confidential. Otherwise, the students experience ethical stress and despair, which affect students, patients, and other healthcare professionals.⁹⁻¹¹

Ethical sensitivity is seen as the first step to making ethical decisions.¹ Individuals with ethical sensitivity can understand the feelings of other individuals and respond to their requests. In the literature, some studies have mentioned the importance of nurses having ethical skills, but it is emphasized that opinions about ethical problems among nurses differ.^{5,9,11}

It is not easy to make the right decision in the face of these obstacles. Hence, the ethical sensibilities of nurses, which are defined as the ability to distinguish ethical problems, should be improved. In ethics courses in nursing education, ethical concepts, ethical norms, how to solve ethical dilemmas in clinical areas, and skills necessary for ethical decision-making should be well discussed so that students may define themselves as competent decision-makers. Furthermore, guidelines and other educational methods with appropriate curricula and methodology help students to gain more knowledge about ethics.^{7,12,13}

In the literature, studies on ethical sensitivity have mostly been conducted using the Moral Sensitivity Questionnaire on working nurses and physicians, but studies on nursing students are limited.^{3,13,14} It is important to evaluate the level of ethical sensitivity of nurses in their professional lives and to compare these results with nursing students. In addition, existing questionnaires in the field do not have the necessary comprehensiveness to measure the ethical sensitivity levels of nursing students.^{2,12} Therefore, due to the importance of the subject, this study was conducted to adapt the ethical sensitivity questionnaire for nursing students (ESQ-NS) into Turkish.

Research Question

- Is the "ESQ-NS" valid for determining the ethical sensitivity of Turkish nursing student?
- Is the "ESQ-NS" reliable for determining the ethical sensitivity of Turkish nursing student?

Materials and Methods

Study Design

This is a cross-sectional and methodological study. It was carried out to determine the language equivalency, validity, and reliability of the ESQ-NS and adapt the questionnaire for Turkish nursing students.

Sample and Participants

The study was conducted with second-, third-, and fourth-year undergraduate nursing students in a private university in Istanbul during

the fall semester of the 2019-2020 academic year (n=210). The inclusion criteria for the research were voluntary participation, giving verbal and written consent, and having clinical hours due to observing ethical dilemmas in clinical areas. In validity and reliability studies to perform factor analysis, the sample size should be at least 5 times greater than the number of items.¹⁵ Taking this into consideration, the sample size of the study has to be a minimum of 65 (13 item numbers of questionnaire x5 times) nursing students. Regardless of sample modeling, an equal number of students in each class participated. The data were collected from a total of 210 students between September 1, 2019, and January 20, 2020.

The participants' mean age was 21.0 ± 1.3 years; 147 (70%) of the students were female, and 63 (30%) of them were male; and 69 (38.1%) were in second grade, 80 (38.1%) were in third grade, and 61 (29%) were in fourth grade.

Instruments

The data collection tools were an information form and an ESQ-NS.

Information Form

The form encompasses a total of 7 questions including sociodemographic characteristics (age, sex, and grade) and questions related to ethics education and ethical situations encountered in clinical practice.

Ethical Sensitivity Questionnaire for Nursing Students

The questionnaire was developed to determine the nursing students' ethical sensitivity levels. Ethical sensitivity questionnaire for nursing students includes 13 items with 3 sub-dimensions such as respect for the individuals, distributive justice, and maintaining patients and was developed by Muramatsu et al in 2019: "The scale consists of 'Respect for the Individuals' (items 1, 2, 3, 4, 5, 6, 7, and 8), 'Distributive Justice' (Items 9, 10, and 11), and 'Maintaining Patients' (Items 12 and 13) sub-dimensions."

The questionnaire is a 4-point Likert type (1=I do not think at all; 4=I think very). The self-report questionnaire can be completed in 3-5 minutes on average. There are no reverse-scored items in the questionnaire. The lowest score to be taken from the questionnaire is 13, and the highest score is 52. The higher the score obtained from the questionnaire, the higher the level of ethical sensitivity of the nursing student. The Cronbach's alpha was 0.82.¹⁰

Data Collection

The data was collected after the student classes ended by researchers. The students were informed about the aim of the study, confidentially, and voluntary participation. It took the students to complete the questionnaire approximately 5-6 minutes. For test-retest reliability, the questionnaire was reapplied to 191 nursing students who volunteered to participate after 2 weeks.

Data Analysis

Statistical analysis was done using the Statistical Package for Social Sciences (SPSS) (IBM Statistical Package for the Social Sciences Inc., version 24.0 PA, USA) software. In data analysis, the evaluation of ordinal data was done by calculating the arithmetic mean, SD, and the evaluation of nominal data was done by calculating frequency and percentage.

The Kaiser–Meyer–Olkin (KMO) and Bartlett's Test of Sphericity were analyzed. After, the confirmatory factor analysis (CFA) was done using the Amos (IBM SPSS Amos, version 24.0 PA, USA) software. Model fit was tested using the Chi-square goodness-of-fit test, goodness-of-fit index (GFI), adjusted GFI (AGFI), comparative fit index (CFI), root mean square residual (RMR), and mean root mean square error of approximation (RMSEA) fit indices. Within the scope of reliability, test–retest reliability and Cronbach's alpha analysis were used to test internal consistency. A level of 0.05% was considered a significance level ($P < .05$).

Ethical Considerations

Written permission was obtained from Muramatsu et al, who developed the questionnaire. Ethics approval from the Non-Interventional Studies Ethical Board of *Biruni* University was obtained (Approval Number: 2019/31-06, Date: 24.07.2019). Besides, the students' verbal and written consent was obtained.

Results

The language and content validity, construct validity, and factor analysis were calculated.

Language and Content Validity

The English language questionnaire was translated into Turkish by 2 linguists and a nursing professor who has an advanced English level. The final version of the Turkish questionnaire was translated back to English. Both original and translated questionnaires were evaluated and no changes were made, then linguistic equivalency was achieved. After the final English questionnaire was translated into Turkish, it was sent to 8 experts for review.

The language validity was evaluated using Davis's (1992) technique. The experts have evaluated the items for necessity, clarity, specificity, and appearance. For this purpose, a 4-point Likert-type expert evaluation form was used: 1=not relevant; 2=somewhat relevant; 3=relevant; and 4=very relevant.¹⁶

Content validity, also called face validity, is about a measure of the meaning items claim to. Item content validity index (I-CVI) indicates the instrument's validity degree determined from experts' ratings of content validity. In this study, the I-CVI ranged from 0.80 to 1.0. After the items are defined through the determination of the I-CVI, the scale CVI (S-CVI) is calculated for the entire questionnaire or scale. The S-CVI of the study was found at 0.96.

Pilot Study

The final version of the Turkish questionnaire was applied to a pilot group ($n=10$) to evaluate the questionnaire's language and comprehensibility overall, and no changes were made. The data of these 10 people were not included in the statistical analysis.

Construct Validity and Factor Analysis

Kaiser–Meyer–Olkin test was performed for sample size adequacy for conducting a factor analysis and Bartlett's test of Sphericity was used to determine multivariate normality. The KMO value was 0.82; the chi-square value for Bartlett's Test of Sphericity was $\chi^2=727.447$ and statistically significant ($P < .001$). These results show that the data were suitable for conducting factor analysis.

The questionnaire' construct validity was examined using CFA which tests the validity of the factor model and the goodness-of-fit indices that indicate a good fit between the structural model and data.

The standardized coefficients between the variables observed with implicit factors provided because of the conducted analysis are given in a path diagram (Figure 1). All factors were *respect for the individuals*, *distributive justice*, and *maintaining patients' confidentiality* with the items as in the original questionnaire.

The results were evaluated according to chi-square goodness of fit (χ^2/SD) value that is sensitive to sample size to degrees of freedom and other commonly used model fit indices. (i.e., GFI, AGFI, CFI, RMSEA, and RMR). As a result of CFA, it was determined that the values observed in the questionnaire factor model showed a good and perfect fit. The reference (normal and acceptable) values for the fit indices and the values of our questionnaire are given in Table 1. It was determined that the model values were acceptable.

When standardized coefficients were examined, it is found that standard error values were low. The t -values that show whether each item remains in the questionnaire were ranged from 3.19 to 10.04 and statistically significant ($P < .001$). Furthermore, explanatory (R^2) values, which represent the total variance proportion for the item explained by the factor, were high. These results confirm the construct validity of the predetermined factor structure. The standard error of measurement, t values, and R^2 values of the items are given in Table 2.

The test–retest reliability and the internal consistency coefficient were calculated.

Test–Retest Reliability (Invariance)

One of the methods for reliability is test–retest reliability which measures the temporal stability of scores from the questionnaire. The correlation between the test and retest is shown in Table 3. According to the results, a positive, moderate, and significant relationship was found between the test and retest application.

Internal Consistency Reliability

The most commonly used method to test the internal consistency reliability coefficient is Cronbach's alpha which measures how consistent the items are with each other in the scale or questionnaire. The Cronbach's alpha coefficient takes a value between -1 and $+1$ and it is suggested that should be as close to $+1$ as possible. In this study, Cronbach's alpha coefficient value was found as 0.80 and retest reliability was 0.77. The Cronbach's alpha coefficient of subscales was found 0.75 for respect for the individuals, 0.74 for distributive justice, and 0.38 for maintaining patients.

Discussion

This reliability and validity study was conducted to adapt the Turkish version of ESQ-NS.

Validity of the Questionnaire

Validity and reliability are 2 important qualities of an instrument that cannot be considered independently of each other. *Validity involves determining the extent to which obtained scores represent the intended measured trait to build an argument based on theory and empirical evidence to support score-based inferences and actions.*¹⁷ In brief, validity is the ability of an instrument to measure intended to measure and has an important place in measuring behavioral features. None of the scales used in measuring behavioral characteristics are completely valid. However, the validity of scales can be brought to a level that will allow measurements to be considered sufficient.¹⁸

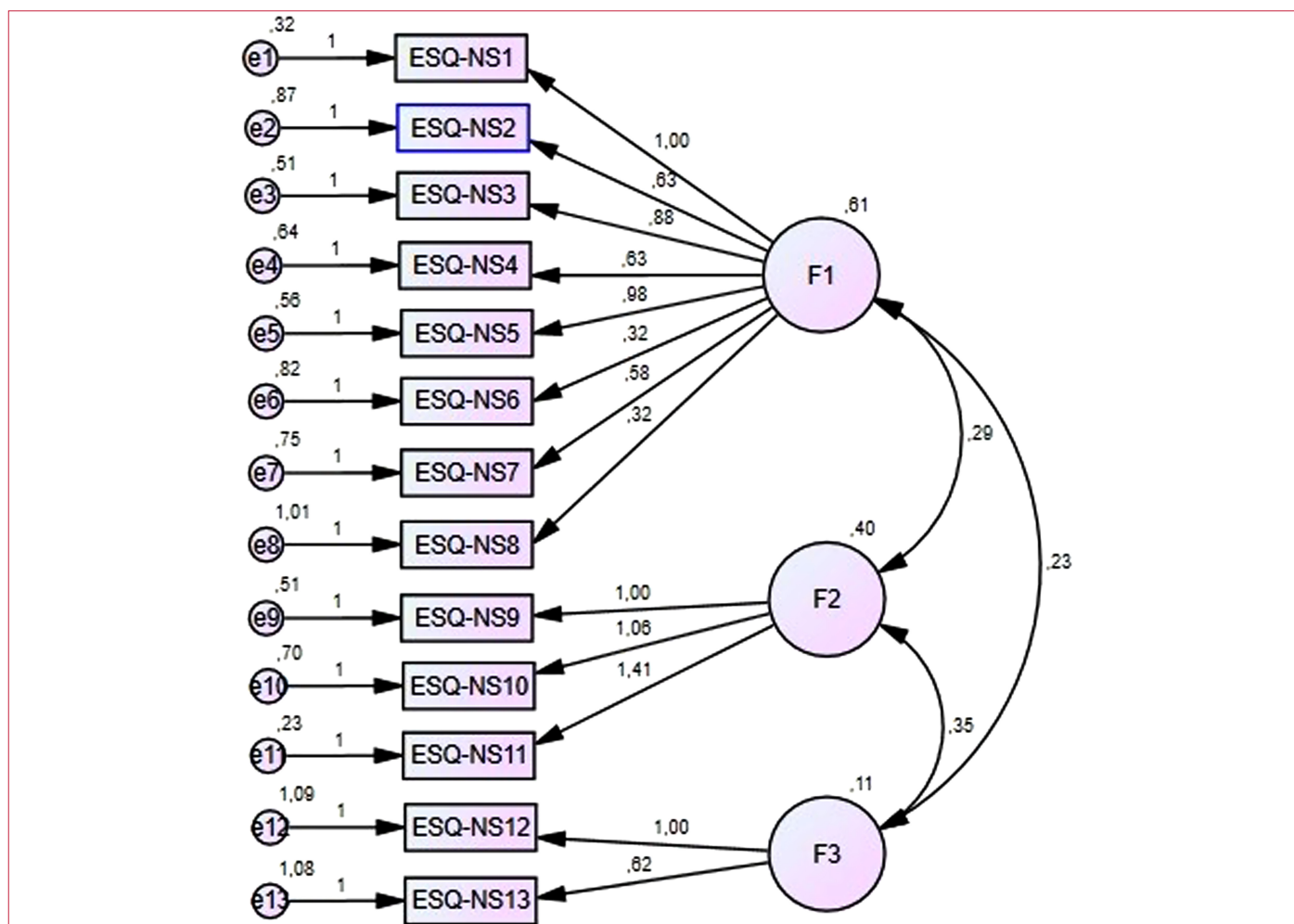


Figure 1. Path diagram of the confirmatory factor analysis.

Content validation focuses on the items selected to create an instrument to provide acceptable content coverage of the feature being measured.¹⁷ To measure the content validity, there is CVI for individualized items and for the scale. It is suggested that both I-CVI be above

0.78 and S-CVI should be above 0.90 for a questionnaire to be valid and our results were for I-CVI ≥ 0.8 and S-CVI ≥ 0.95 and valid.¹⁹

The construct validity of a scale was evaluated using CFA. Confirmatory factor analysis is one method of structural equation modeling that assess and invoke the measurement models and latent variables. Confirmatory factor analysis helps to understand variables' relation with their factors, how the factors are independent of each other, and whether they are sufficient to explain the model.²⁰ The CFA results show that the Turkish version of the questionnaire is valid. The questionnaire's χ^2/SD value was 1.17, which was within normal limits (above 0.20). Goodness-of-fit index value >0.90 considers a good fit. The GFI value of the questionnaire was 0.91 and can be said as it shows a good fit. Adjusted GFI is the corrected GFI value considering the sample size. Adjusted GFI value >0.91 indicates a perfect fit, while 0.90-0.94 indicates satisfactory. The AGFI value for the adapted questionnaire was 0.91 and showed a satisfactory level of fit. Comparative fit index value >0.90 indicates a good fit. This value on the questionnaire was 0.91. As can be understood from all these results, the questionnaire can be said to have reliable and highly successful fit indexes. For RMSEA and RMR values, it should be closer to 0 represent a good fit, and approaching 0.08 indicates the complexity of the

Index	Normal Value	Acceptable Value	ESQ-NS
χ^2/SD	<2	<5	1.17
GFI	>0.90	>0.85	0.91
AGFI	>0.90	>0.85	0.91
CFI	>0.95	>0.90	0.91
RMSEA	<0.05	<0.08	0.06
RMR	<0.05	<0.08	0.06

AGFI, adjusted GFI; CFI, comparative fit index; ESQ-NS, ethical sensitivity questionnaire for nursing students; GFI, goodness-of-fit index; RMR, root mean square residual; RMSEA, root mean square error of approximation.

Table 2. Standardized Path Coefficient and t-Values for the Structural Model

Items	Factors	SE	t-value	P	R ²
ESQ-NS8–To administer medication to a patient with dementia who refuses medication, it is mixed with a drink without the patient’s knowledge.	F1	0.099	3.198	.001	0.539
ESQ-NS7–A patient under your care who was of the opposite sex had refused to let you watch over him/her when he/she showered; however, you did so after persuading him/her to allow you to.	F1	0.091	6.312	<.001	0.462
ESQ-NS6–You allowed a patient with dementia to stay at the nurses’ station while sitting in a wheelchair with the safety belt fastened.	F1	0.090	3.595	<.001	0.568
ESQ-NS5–A sensor mat is placed at the bedside of a patient who had fallen once in the ward.	F1	0.097	10.042	<.001	0.714
ESQ-NS4–An elderly patient who had said he/she wanted to go home was placed in a facility because he/she had no relatives who could care for them at home.	F1	0.087	7.231	<.001	0.525
ESQ-NS3–Although a terminally ill patient has refused postural changes due to respiratory discomfort caused by moving, postural changes are performed every 2 hours due to the high risk of pressure ulcers.	F1	0.090	9.754	<.001	0.694
ESQ-NS2–Although a postoperative patient has refused postural changes due to pain, postural changes are performed to prevent postoperative complications.	F1	0.099	6.412	<.001	0.469
ESQ-NS1–Railing is placed around a bed to prevent the patient from falling out.	F1				0.812
ESQ-NS11–To accommodate the eating speed of patients with dysphagia, you provide eating assistance that involves uninterrupted supervision for at least 1 h.	F2	0.152	9.295	<.001	0.883
ESQ-NS10 - A bedridden patient who had always received a bed bath pleaded to take a regular bath; therefore, 3 nurses assisted the patient in taking a regular bath.	F2	0.137	7.768	<.001	0.626
ESQ-NS9–A terminally ill patient wished to use the bathroom for elimination; therefore, 2 nurses took the patient to the bathroom and aided.	F2				0.662
ESQ-NS13–Reporting the details of the patient care to a clinical leader in the corridor.	F3	0.168	3.671	<.001	0.492
ESQ-NS12–Reporting the condition of a patient under your care to the nurse in charge in a multi-bed hospital room.	F3				0.602

ESQ-NS, ethical sensitivity questionnaire for nursing students.

model.Both RMSEA and RMR values were 0.06 for the questionnaire and in acceptable references.²¹

Reliability of the Questionnaire

The correlation coefficient of the measurement values obtained from test-retest applications is the reliability coefficient of the scale. For the reliability coefficient to be found with the invariance criterion over time, an appropriate correlation analysis is made according to the data type.¹⁷ If the measured instrument is continuously variable and has an equal range or ratio, the Pearson Moment correlation coefficient is calculated because it is the strongest and the most powerful correlation technique. Correlation coefficients give information about the degree and direction of the relationship between the 2 variables and take

values between –1 and +1. The fact that the coefficient was +1 indicates the presence of a positive and perfect relationship.²² The stability of the questionnaire scores depending on a short period was analyzed by testing again with 191 nursing students after a 2-week interval. The questionnaire was found to be consistent with test-retest analysis.

The internal consistency of instruments is a concept based on the assumption that the tool consists of independent units for a particular purpose and that they are known and have equal weights within the whole. Therefore, the internal consistency is also called the homology of the instrument. It is the reliability that determines that all units of the questionnaire are capable of measuring the variable of interest. To test internal consistency reliability, the 2 methods named Cronbach’s alpha coefficient and item-total score correlation are used.^{22,23} Within the scope of reliability, Cronbach’s alpha analysis is designed as a measure of internal consistency.²⁴ Cronbach’s alpha coefficient should be 0.70 or higher to be a reliable questionnaire. Accordingly, scores closer to 1.00 make the internal consistency of items in the instrument to be assessed as greater.^{1,22,24} In our study, the Cronbach’s alpha reliability coefficient was found as 0.80. These data suggest that the internal consistency of the Turkish version of the ESQ-NS is preserved.

Table 3. The Pearson Correlation Between Test and Re-Test Scores

	Mean (SD)	r*	P
Test	33.5 (7.2)	0.540	.001
Re-test	37.4 (6.3)		

*Pearson correlation coefficient, P < .005.

Limitations

The findings are limited to the responses of nursing students who voluntarily participated in the research. Besides, the maintaining patients subscale's Cronbach's alpha coefficient was lower than 0.70.

Conclusion

In this study, which aimed to adapt the Turkish ESQ-NS, the language and content validity and internal consistency reliability were tested. In line with these results, it was concluded that the 13-item, 3-sub-dimension Turkish version of the questionnaire was a valid and reliable tool. We believe that the theoretical classes and clinical practices taken during school will affect nursing students' levels of ethical sensitivity and further ethical decision-making in their future roles. For this reason, it is recommended to conduct further research with larger samples. It will contribute to the literature and also the nursing curricula.

Ethics Committee Approval: Ethics approval from the Non-Interventional Studies Ethical Board of Biruni University was obtained (Approval Number: 2019/31-06, Date: 24.07.2019).

Informed Consent: Verbal/Written informed consent was obtained from the students who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – S.K., M.M.; Design – S.K., M.M.; Supervision – S.K.; Resources – S.K., M.M.; Materials – M.M.; Data Collection and/or Processing – M.M.; Analysis and/or Interpretation – S.K., M.M.; Literature Search – S.K., M.M.; Writing – S.K., M.M.; Critical Review – S.K.

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