Mediterranean Nursing and Midwifery

Mediterr Nurs Midwifery 2023; 3(2): 56-63 DOI:10.4274/MNM.2023.22131

ORIGINAL ARTICLE

Determining Self-efficacy and Quality of Life in Stroke Patients

İnmeli Bireylerde Öz Etkililik ve Yaşam Kalitesi Arasındaki İlişkinin Belirlenmesi

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Abstract

Objective: Stroke is an important health problem. It causes and impairs their quality of life. Learning the quality of life of the individual and planning treatment are important factors. Self-efficacy is also a concept that has an impact on the quality of life. This study aimed to determine the correlation between self-efficacy and the quality of life in patients.

Method: The cross-sectional study was conducted in a neurology outpatient clinic of a public hospital in western Turkey between March and September 2018. The sample of 170 stroke patients. The data collection tools used were: A "socio-demographic characteristics information form", the "stroke-specific quality of life scale (SSQOLS)", and the "chronic disease self-efficacy scale (CDSES)". In pairwise comparisons, the Mann-Whitney U test was used for variables which were not normally distributed. The correlation between was examined using Spearman correlation test.

Results: A strong positive correlation was found between SSQOLS and CDSES mean scores of the individuals. In the present study, it was determined that the patients who were male and married had a higher quality of life as well as a higher self-efficacy level. We observed in the present study that a higher self-efficacy level affected quality of life positively. Thus, we have overemphasized that need to be examined together within the scope of disease management of patients.

Conclusion: Such assessments make important contributions to determining individuals care needs. Therefore, nurses play an important role in this section. Quality of life and self-efficacy levels need to be considered while planning the care and rehabilitation of patients.

Keywords: Stroke, quality of life, self-efficacy, nursing

Öz

Amaç: İnme önemli bir sağlık problemidir. Bireylerin yaşam kalitesinin bozulmasına sebep olmaktadır. Bireyin, yaşam kalitesinin öğrenilmesi bakımın ve tedavinin planlanması açısından gereklidir. Öz etkililik de yaşam kalitesine etkisi olan önemli bir kavramdır ve birbirlerini olumlu ya da olumsuz anlamda etkilemektedirler. Bu çalışmanın amacı inmeli bireylerde öz etkililik ve yaşam kalitesi arasındaki ilişkinin belirlenmesidir.

Yöntem: Çalışma kesitsel nitelikte bir araştırmadır. Türkiye'nin batısındaki bir devlet hastanesinin nöroloji polikliniğinde Mart-Eylül 2018 tarihleri arasında gerçekleştirilmiştir Araştırmanın örneklemini 170 birey oluşturmuştur. Kullanılan veri toplama araçları: "Sosyo-demografik özelliklere ilişkin bilgi formu", "inmeye özgü yaşam kalitesi ölçeği (İÖYKÖ)" ve "kronik hastalıklarda öz etkililik ölçeğidir (KHÖEÖ)". İkili gruplar arası karşılaştırmalarda Mann-Whitney U testi, sürekli değişkenler arasındaki ilişki için Spearman's korelasyon testi kullanılmıştır.

Bulgular: Bireylerin İÖYKÖ ile KHÖEÖ puan ortalamaları arasında pozitif yönlü çok güçlü ilişki olduğu saptanmıştır. Erkeklerin kadınlara, evli olanların olmayanlara göre yaşam kalitesi ve öz etkililik düzeyleri her iki ölçek puan ortalamasında istatiksel olarak anlamlı oranda yüksektir. Çalışmamızda yüksek öz etkililik düzeyinin yaşam kalitesini olumlu yönde etkilediği görülmüştür. Bu nedenle inme hastalarının hastalık yönetimi planırken bu iki kavramın birlikte değerlendirilmesi gerektiğini vurgulamaktayız.

Sonuç: Yaşam kalitesi ve öz etkililik düzeylerinin birlikte değerlendirilmesi; bireylerin tedavi ve bakım ihtiyaçlarının belirlenmesinde önemli katkılar sağlamaktadır. Bu nedenle hemşireler bu noktada önemli bir rol oynamaktadır. İnme hastalarının bakımı ve rehabilitasyonu planlanırken yaşam kalitesi ve öz etkililik düzeyleri dikkate alınmalıdır.

Anahtar Kelimeler: İnme, yaşam kalitesi, öz etkililik, hemşirelik

***This study was presented at the 3rd International Congress of Nursing, Cyprus 2019 (07.03.2019-09.03.2019).**

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Received: November 29, 2022
Accepted: February 22, 2023

Cite this article as: Küçükakgün H, Atay S. Determining Self-efficacy and Quality of Life. Mediterr Nurs Midwifery 2023; 3(2): 56-63

Introduction

Stroke is an important health problem that can affect all aspects of life. It poses a high risk of mortality and morbidity and can lead to a serious personal and social financial burden (1). Especially elderly individuals can experience considerable functional problems after stroke (2). Individuals mostly have a difficulty coping with psychological, social and functional consequences and stroke also has serious financial implications for institutions due to the need for rehabilitation over the long term (3). This condition affects individuals' neurological and physical functions, leading to dependence on others in their daily life activities, seriously affecting their quality of life and preventing their contentment in life (4,5). Therefore, it is of prime importance to carefully assess overall survival prospects and all losses of function after a stroke, as well as the degree to which quality of life is affected by changes in physical and mental functions (6).

Self efficacy is known to have a significant effect on the quality of life. Self-efficacy is defined as "a person's belief in initializing necessary actions and getting a result, in order to be effective on life events" (7). It is stressed that successful self-efficacy increases the quality of life in individuals with chronic illness (8). In addition, it has been indicated that individuals who have a high sense of self-efficacy are better able to cope with their disease, than those who have a low sense of self-efficacy (9,10). Increasing the level of self-efficacy increases the adaptation of the individual to the disease and causes an increase in the level of performing daily life activities and a decrease in depression. It also makes it easier for the individual to overcome the problems encountered (9,10).

Levels of self-efficacy and the quality of life can affect one another in both positive and negative ways. Self-efficacy is an important factor in initiating and maintaining goal-directed behavior. In stroke, a person's decreased confidence in performing a task for self-care or independent living will affect the actual performance of the task. Since self-efficacy is a behavioral determinant, the perceived capacity to perform the task will affect actual task performance, which in turn will affect functional independence (11-13). Successful self-efficacy after the event for the stroke survivor; it is stated that it is associated with reducing the effect of disability, increasing the level of capability and increasing the quality of life, as well as reducing depressive symptoms (14). It is stated that people with a high level of self-efficacy have better ability to work than those with low self-efficacy while performing daily life activities (9,15). Self-efficacy perception is a concept that can be changed and developed. Especially with the experiences of individuals, this concept can be developed and planned activities can be completed successfully (7). The individual should be aware of his/her own capacities and abilities. Sometimes these abilities emerge spontaneously, and sometimes awareness can be created with external support or guidance (7). Thus, it is emphasized that these parameters should be examined in stroke patients with other clinical findings as well (11-13,16). These assessments make important contributions to determining treatment and care needs of individuals, directing rehabilitation goals properly, sustaining daily life activities, and reducing depressive symptoms (4,8).

Main Points

- Levels of self-efficacy and the quality of life affect one another both positively and negatively. Thus, it is overemphasized that stroke patients are examined together in disease management.
- Consider the quality of life and self-efficacy levels when planning the care and rehabilitation of stroke patients.

In the meta-analysis study conducted by Taylor et al. (8). It is idicated that there is inadequate number of studies examining the self-efficacy of individuals surviving after stroke (8). In Turkey, there are studies examining the factors that affect the quality of life in stroke patients (4,17) and the correlation between self-efficacy and the quality of life in other chronic illnesses; whereas, there is only one study examining the correlation between self-efficacy and the quality of life in stroke patients (18). This study, it was aimed to determine the relationship between self-efficacy and quality of life in individuals with stroke. In the study; What is the level of quality of life in individuals with stroke? What is the level of self-efficacy in individuals with stroke? What are the factors affecting self-efficacy and quality of life in individuals with stroke? Is there a relationship between self-efficacy and quality of life in individuals with stroke? answers to the questions were sought. It is believed that the present study will guide in planning rehabilitation services in the future by determining the correlation between self-efficacy and the quality of life in stroke patients.

Material and Methods

Study Design

This study is a cross-sectional study conducted to determine the correlation between self-efficacy and the quality of life in stroke patients.

Setting

The study was conducted in a neurology outpatient clinic of a public hospital in western Turkey between March and September 2018.

Participants & Variables

The population of the study consisted of stroke patients being followed at a neurology outpatient clinic at a public hospital between March and September 2018. The sample formula of the unknown universe was used to determine the sample. According to the formula, the error level was taken as 0.05. The mean of the stroke-specific quality of life scale (SSQOLS) in similar studies was taken as 3.2, with a deviation of ±0.5 from the mean. According to this formula, the number of samples was determined as 157. Data were collected from 170 patients who were diagnosed with stroke at that neurology outpatient clinic between the study dates.

Inclusion criteria included being diagnosed with stroke, having no serious vision or hearing problems, being able to communicate, and not suffering from any form of advanced cognitive disability. Individuals who met the criteria and gave their consent were included in the study.

Data Sources/Measurement

In neurology outpatient clinics, the data were collected from individuals and their relatives by the researcher via the face-to-face interview method. The data collection tools used in this study were "socio-demographic characteristics information form", "stroke-specific quality of life scale (SSQOLS)" and "chronic disease self-efficacy scale (CDSES)".

Socio-demographic characteristics information form: The researchers prepared this form by conducting a literature review (2,4,17,19,20). It included questions about individuals' age, gender, marital status, educational background, profession, number of attacks, functional dependency level, hemibody affected, time from first stroke, disability after stroke .

SSQOLS: The scane was developed by Williams et al. (21). Turkish validity and reliability of the scale was conducted by Hakverdioğlu Yönt and Khorshid (19). It is a five-point Likert scale with 48 items and 8 subscales. The eight dimensions were activities (19 Items), social and family roles (8 Items), language (5 Items), vision (3 Items), energy (4 Items), mood (4 Items), personality (3 Items) and thinking (2 Items). The mean score of each subscale is calculated by adding the subscale item scores and dividing the resultant value by the number of items of that subscale. The total score of the scale is calculated by dividing the total mean score of each subscale by 8. A higher score indicates a higher quality of life. A lower score indicates a lower quality of life (19).

CDSES: Lorig et al. (22), developed this scale to measure the self-efficacy perceptions of individuals suffering from chronic disease. Ceyhan and Ünsal (23) conducted the Turkish validity and reliability study of the scale. It includes 30 questions and 10 subscales. The dimensions of the scale consist of doing sports regularly (3 item), getting information about the disease (1 item), getting help from society, family and friends (3 item), communication with doctor (3 item), general disease management (4 item), doing housework (2 item), social/recreation activities (2 item), coping with the symptoms (5 item), coping with asthma (1 item),managing depression/control (6 item), titles respectively. Self-efficacy perception is rated on a scale ranging from 1 to 10 points. While point 1 stands for "I don't trust at all.", the point 10 stands for "I completely trust." The mean score of self-efficacy is obtained by dividing the total score by the total number of items. A score of ≥7 indicates that individual's disease-related self-efficacy is high and their belief that they will overcome all necessary actions is adequate. A score of <7 indicates a low sense of self-efficacy.

Ethical Considerations

In order to conduct the study, approval from the Ethics Committee of the Çanakkale Onsekiz Mart University Related Institution (decree no: 2018-05), from the provincial directorate of health (no: 81682077-811.99), and written permission from the participants were obtained.

Statistical Analysis

The data were analyzed using SPSS (version 19.0). The normal distribution of the variables was examined using the Kolmogorov-Smirnov test. Mean, standard deviation, minimum, maximum, frequency, and percentage values were used in presenting descriptive data. In pairwise comparisons, the Mann-Whitney U test was used for variables which were not normally distributed. The correlation between continuous variables lacking a normal distribution was examined using Spearman's correlation test. The p-value of <0.05 was accepted as statistically significant.

Limitations

This study had some limitations. The study was conducted in neurology outpatient clinics of only one public hospital, which in turn might limit the generalization of results. Another limitation is that the responses given by individuals to the SSQOLS and CDSES were based on self-reports.

Results

It was found that 60.6% of the stroke patients included in the study were male, 70% were married, 64.7% were primary school graduates, 47.1% were retired, and 33.5% were housewife. The average age of the individuals was 69.1±11.1 years (min: 26, max: 90). Descriptive characteristics of individuals in the study for stroke are given in Table 1.

Table 1.
Descriptive Characteristics of the Stroke Patients (n=170)

Descriptive characteristics	**n**	**%**
Number of attacks		
Primary stroke	130	76.4
Secondary stroke	29	17.1
Tertiary stroke	11	6.5
Functional dependency level		
No symptoms or no significant disability	43	25.3
Slight or moderate disability	83	48.8
Severe disability	44	25.9
Hemibody affected		
Right	79	46.5
Left	77	45.3
Both	14	8.2
Total	170	100
	Mean	**± SD (min-max)**
Time from first stroke (month)	46.8	±74.4 (1-456)

SD=standard deviation

When the table is examined, 76.4% of the individuals had a primary stroke. 48.8% of individuals with stroke are slight or moderate disability. 46.5% of the right, 45.3% of the left, 8.2% of both sides were hemibody affected. Time from first stroke of individuals was found to be 46.8±74.4 (min: 1, max: 456) months (Table 1).

Post-stroke disabilities is shown in Table 2. When the table is examined, the disabilities in individuals after stroke; numbness or tingling in the face, arm or leg, especially on one side of the body in 68.8%, difficulty walking in 75.9%, loss on balance in 67.1%, weakness in the arms and legs in 68.8%, dysphagia in 25.3%, aphasia in 42.4%, fatigue in 69.4%, incontinence in 24.1% (Table 2).

The quality of life total mean score of the stroke patients was 2.9±0.9. While the highest mean score was obtained from the "vision (3.9±1.1)" subscale, the lowest mean score was obtained from the "personality (2.4±1.4)" subscale (Table 3).

When the distribution of chronic disease self-efficacy total and subscale mean scores in the present study was examined, the total mean score of the individuals was found to be 5.7±2.3. The highest self-efficacy level of stroke patients was obtained in "coping with dyspnea (8.4±2.4)" subscale, whereas the lowest self-efficacy level was obtained in "doing housework (4.8±3.2)" subscale. 63.5% (n=108) of the individuals obtained scores of < "7," whereas 36.5% (n=62) obtained scores of ≥7 (Table 4).

In the study, a positive strong correlation was observed between the mean scores of SSQOLS and CDSES (r=0.782, p<0.001) (Table 5).

When the mean scores of SSQOLS and the CDSES were examined together with their descriptive traits, it was found that male patients had higher mean scores in both quality of life (p<0.001) and self-efficacy (p<0.001) than their female counterparts. In addition, the mean scores of SSQOLS (p=0.018) and the CDSES (p=0.018) were determined to be higher in married patients than single patients (Table 6). There was a negative weak correlation between age and the mean score of SSQOLS (r=-0.210; p=0.006), and also a negative moderate correlation between age and the mean score of CDSES (r=-0.266; p<0.001) (Table 6).

Discussion

Stroke patients can suffer from problems related to vision, sense, tonus, language, coordination-balance, swallowing, sphincter, and cognitive functions, all of which can affect

Table 2.
Post-stroke Disabilities (n=170)

Disability after stroke (*)	**Number***	**%***
Numbness or tingling in the face, arm or leg, especially on one side of the body	117	68.8
Difficulty walking	129	75.9
Loss on balance	114	67.1
Weakness in the arms and legs	117	68.8
Dysphagia	43	25.3
Aphasia	72	42.4
Fatigue	118	69.4
Incontinence	41	24.1

**multiple options are marked*

Table 3.
Score of the Stroke Specific Quality of Life Scale-SSQOLS (n=170)

SSQOLS domains	**Mean ± SD**	**Min/max**
1. Activities	2.9±0.9	1.0-5.0
2. Energy	2.6±1.1	1.0-5.0
3. Mood	3.1±1.4	1.0-5.0
4. Social and family roles	2.5±1.3	1.0-5.0
5. Vision	3.9±1.1	1.0-5.0
6. Language	3.6±1.1	1.0-5.0
7. Thinking	2.6±1.5	1.0-5.0
8. Personality	2.4±1.4	1.0-5.0
Total score	2.9±0.9	1.1-4.9

SD=standard deviation

their quality of life (24,25). Of these, visual problems are less seen (12%), while post-stroke depression is encountered at the rate of 30-45% (4,20,25). In the present study, it was found that the stroke-specific quality of life level of the participants was moderate. Visual problems affected their quality of life less; whereas, personality problems affected their quality of life at most (Table 3). Other study that assessed stroke-specific quality of life revealed that

Table 4.
Score of the Chronic Disease Self-efficacy Scale (CDSES) (n=170)

Sub dimensions	**Median ± SD**	**Min/max**
1. Doing sports regularly	5.1±3.0	1.0-10.0
2. Getting information about the disease	6.0±3.0	1.0-10.0
3. Getting help from society, family and friends	7.0±2.7	1.0-10.0
4. Communication with doctor	5.8±2.9	1.0-10.0
5. General disease management	5.3±2.7	1.0-10.0
6. Doing housework	4.8±3.2	1.0-10.0
7. Social/recreation activities	5.8±2.9	1.0-10.0
8. Coping with the symptoms	5.1±2.5	1.0-10.0
9. Coping with asthma	8.4±2.4	1.0-10.0
10. Managing depression/control	5.5±2.7	1.0-10.0
Total score	**5.7±2.3**	**1.0-9.7**
<7 **≥7**	**n** **108** **62**	**%** **63.5** **36.5**

SD=standard deviation

Table 5.
The Relationship Between Stroke Specific Quality of Life Scale (SSQOLS) and the Chronic Disease Self-efficacy Scale (CDSES) Scores (n=170)

	SSQOLS	
	r	**p**
CDSES	0.782	**<0.001**

r=Spearman's correlation test

Table 6.
Comparison of the Stroke-specific Quality of Life Scale (SSQOLS) and the Chronic Disease Self-efficacy Scale (CDSES) with descriptive characteristics (n=170)

Descriptive characteristics	**SSQOLS**	**Z**	**p**	**CDSES**	**Z**	**p**
	Mean ± SD			**Mean ± SD**		
Gender Female	2.6±1.0			4.9±2.4		
Male	3.1±0.9	-3.540	**<0.001**	6.2±2.0	-3.619	**<0.001**
Marital status						
Married	3.0±0.9			6.0±2.2		
Single	2.6±1.0	-2.374	**0.018**	5.0±2.4	-2.363	**0.018**
Educational background						
≤ Primary school	2.8±0.9			5.6±2.3		
> Primary school	3.1±1.0	-1.384	0.166	6.3±2.3	-1.670	0.095
	SSQOLS		**CDSES**			
Age	r=-0.210 **p=0.006**		r=-0.266 **p=<0.001**			

Z=Mann-Whitney U test, SD=standard deviation, Mann-Whitney U test was used to compare groups. Spearman was used for correlation analysis

individuals obtained the lowest mean score from the "personality (2.38±1.41)" subscale and the highest mean score from the "vision (4.32±0.99)" subscale (19). It appears that psychosocial problems should not be overlooked, it appears, because they can have a significant effect on the quality of life of stroke patients within the scope of rehabilitation services (26). Several studies have indicated that high self-efficacy is one of the most potent protective factors on depressive symptoms (27). Depression is delayed in diagnosis in people with stroke and their caregivers, and this affects the course of treatment. Various psychosocial methods are suggested in the literature in the management of depression (i.e., tailored support; educational resources; cognitive behavioural therapy; social support; stress management; social/dyad support; peer support) (11,12,28).

In the present study, the self-efficacy total mean score of the individuals was found to be 5.7±2.3 according to the CDSES. According to the results of the present study, fact that self-efficacy total mean score is below 7 is an important result indicating that "individuals have a low self-efficacy level" (Table 4). Similarly, stroke patients had low self-efficacy levels in the literature. Low self-efficacy also affects many factors (11,13,14). Self-efficacy helps to meet the needs of stroke patients and reintegrate them into society (29). It is of critical importance to make an assessment in order to define patient problems, solve these problems and initiate rehabilitation services after stroke (30). Use of specific scales is suggested when making an assessment. As there was no stroke-specific self-efficacy scale with Turkish validation during the present study, we made an assessment via the CDSES.

In the present study, a positive strong correlation was found between the self-efficacy and the quality of life mean scores. Upon considering this result, it can be asserted that there is a direct correlation between quality of life and self-efficacy. Thus, as individuals' self-efficacy increases, their quality of life will also increase. The literature stresses that because self-efficacy and quality of life levels can influence one another either positively or negatively, it is necessary to make them together while planning disease management for stroke patients (16,31,32). These assessments make important contributions toward determining the course of treatment and care needs of individuals, directing rehabilitation goals properly, and sustaining activities of daily living (4,18).

When comparing the mean scores of SSQOLS with those of the CDSES according to descriptive characteristics (Table 6), male patients were found to have higher mean scores than their female counterparts, which is compatible with the literature (17,18,33). In contradiction to the present study, some studies have reported that women have a higher quality of life (17,18) as well as self-efficacy levels than men do (18). The gender differences in these studies are thought to be associated with the roles expected from women in society (e.g., motherhood, wifehood, household chores). This is an important statement as the expectations of men and women can make an impact on quality of life post stroke. It is also important to consider the age of the subject as roles change in time.

In the present study, SSQOLS and the CDSES total mean scores were found to be higher in married patients compared to single ones (Table 6). Upon examining the literature, differences between the results of studies that examine correlation between marital status, self-efficacy, and the quality of life are observed. For example, no significant difference was found between the quality of life, self-efficacy, and marital status in Topçu and Oğuz's (18) study ($p>0.05$). However, Hakverdioğlu Yönt and Khorshid (19) found in their study that single individuals obtained higher scores from SSQOLS than their married and widowed counterparts did. These different results might be associated with the social support taken by married individuals, from partner or family, as well as differences in characteristics of the sample groups in the studies.

When making a comparison according to educational background in the present study, we saw that there was an increase in the quality of life and self-efficacy levels even though it was not statistically significant (Table 6). Also, in the other study in literature, there was a similar correlation between educational background, self-efficacy and the quality of life (17-19). In the study by Jeon et al. (34), educational background reduced the quality of life, though not statistically significant. These different results can be associated with the multidimensional structure of the concepts of self-efficacy and the quality of life.

In the present study, a negative weak correlation was found between age average and the mean score of stroke-specific quality of life scale. Likewise, a negative moderate correlation was identified between age average and mean score of CDSES (Table 6). In their study, Topçu and Oğuz (18) revealed that patients' quality of life and self-efficacy levels decreased with age, albeit not in a statistically significant manner. In their study, Öztürk et al. (4), determined that quality of life was negatively affected in stroke patients over the age of 55 years. In their study, Brouwer-Goossensen et al. (35), found that there was a statistically significant correlation between age and self-efficacy level. In light of the findings of both the present study as well as other studies, it appears that age has a negative effect on individuals' quality of life and self-efficacy levels.

Conclusion

In the study, a statistically positive and strong correlation was identified between the mean scores of Stroke-Specific Quality of Life and the CDSES of the patients. A comparison of the SSQOLS and CDSES mean scores of individuals with their descriptive characteristics revealed that males and married patients had a higher quality of life as well as higher self-efficacy levels. Upon comparing the individuals' educational background, no statistical significance was

found at all. Additionally, a negative weak correlation was found between age and mean score of SSQOLS. Likewise, a negative moderate correlation was found between age and the individuals' mean score of CDSES.

According to the results of the study; for disease management of stroke patients, it can be suggested to increase the number of studies assessing the quality of life and self-efficacy levels together, conduct studies in larger sample groups, conduct long-term studies to assess self-efficacy and the quality of life in stroke. The suggestion of long-term studies to study both self-efficacy and quality of quality of life is important as life is not stable. Also, consider the quality of life and self-efficacy levels when planning the care and rehabilitation of stroke patients and use disease-specific scales in the assessment of individuals' self-efficacy and quality of life.

Acknowledgments
I sincerely thank the neurology outpatient clinic team that supported me during the data collection phase and the stroke individuals who agreed to participate in the research and devote their valuable time for their patience and contribution.

Ethics Committee Approval: In order to conduct the study, approval from the Ethics Committee of the Çanakkale Onsekiz Mart University Related Institution (decree no: 2018-05), from the provincial directorate of health (no: 81682077-811.99).

Informed Consent: Written permission from the participants were obtained.

Peer-review: Externally peer-reviewed.

Author Contributions: Conception – H.K., S.A.; Design – H.K., S.A.; Supervision – S.A.; Fundings – H.K., Materials – H.K., S.A.; Data Collection and/or Processing – H.K., Analysis and/or Interpretation – H.K., S.A.; Literature Review – H.K., S.A.; Writing – H.K., S.A.; Critical Review – H.K., S.A.

Declaration of Interests: No conflict of interest was declared by the authors.

Funding: The authors declare no conflict of interest. This work was supported by the Scientific Research Coordination Unit (project number: TYL-2018-25139).

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