

Vaginal douching among married Turkish women and relation to quality of life

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This study is intended to review vaginal douching practices and associated factors and assessment of quality of life among married Turkish women. This is a cross-sectional study conducted on women admitted to Ankara Dr Nafiz Korez Sincan State Hospital in Turkey between March 01 and June 30, 2014. The study group consisted of 663 women. A Personal Information Form was used to collect data on some socio-demographic characteristics of the women, vaginal douching practices and some variables believed to be associated and the Short Form-36 (SF-36) to determine their quality of life. Mean age of the women in the study group was 33.46±10.38 yrs. In this study, prevalence of vaginal douching was determined to be 41.2%. Vaginal douching was mostly performed for cleaning and feeling comfortable (27.6%). The frequency of vaginal douching was higher in premenopausal women, women with a history of dyspareunia, with chronic pelvic pain, with urinary incontinence, with a history of sexual intercourse at least once or more in a week, with a history of genitourinary infection and those using traditional birth control method ($p<0.05$, for each one). No difference was observed between women who douche and do not douche in terms of scores obtained from all domains of SF-36 ($p>0.05$ for each domain).

Keywords: Genitourinary infection, Married women, Quality of life, Sf-36, Vaginal douching

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Douching is commonly performed both in our country and all around the world. Vaginal douching is the process of washing out the vagina with a liquid solution for rinsing the vagina after menstruation or sexual intercourse, preventing pregnancy, treating infection or for personal hygiene¹. Prevalence rates of douching vary considerably from country to country and region to region. Based on the data from the National Survey of Family Growth (2005), the overall prevalence of vaginal douching in the United States (US) declined from 36.7% in 1988 to 26.9% in 1995 but increased to 32.2% in 2002². Furthermore, vaginal douching practice is more common among women in African and Asian countries compared to other countries. The frequency of douching was reported to be 46-97% in some African countries^{1,3}. This rate is 89.6% in Indonesia, one of South East Asian countries, 76.7% in Cambodia and 21.2% in Shanghai, China⁴. Some studies conducted in Turkey reported that the frequency of vaginal douching is 30.4-81%⁵. Social, cultural and educational factors

such as nationality, cultural norms, geographical area, race and ethnicity affect the frequency of douching⁶. Several studies revealed reasons and contributing factors for vaginal douching in Turkey. Reasons that Turkish women douche include personal hygiene, religious beliefs, contraception, infection prevention and removing menstrual blood^{7,8}. Douching reduces the acidic environment in the vagina and therefore has an adverse effect on reproductive health⁹. Genital infections may also spread by ascending route from cervix to uterus and then to the tubes and abdominal cavity through pathogen transport with the agent used for douching⁸. The studies conducted on vaginal douching suggested that douching is associated with pelvic inflammatory disease and increases sexually transmitted infections, tendency to viral and bacterial vaginitis in case of immune deficiency as well as the risk of vulvovaginal candidiasis and ectopic pregnancy¹⁰. These infections affect the sex life, family life, daily activities and psychology of women adversely, and bad odor and genital itching resulting from the genital infections cause social isolation of

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women, have a negative impact on their social lives and decrease their quality of life¹¹. Vaginal douching is an important public health issue as it adversely affects the woman health^{4,12}. However, in the Turkish society, douching is neglected by a majority of public and healthcare professionals. Nurses should therefore address douching practices and relevant beliefs of women presenting to the hospital. Nurses should encourage women of all age groups for stopping or abstaining from douching, one of the high risk hygiene practices, by using culturally sensitive training strategies. Screening programs covering entire population should be implemented so as to reduce the frequency and prevent douching from spreading^{1,4}.

This study was intended to determine the frequency of vaginal douching, to review the factors associated with vaginal douching and to assess quality of life among married women.

Material and methods

Setting and sampling

This is a cross-sectional study conducted on married women admitted to Ankara Dr Nafiz Korez Sincan State Hospital in Turkey between March 01, 2014 and June 30, 2014. Total number of patients who presented to the gynecology polyclinic of the hospital during the study was 1050, 663 of which (63.2%) constituted the study group.

Procedures

The women included in the study were discussed in the waiting room of the hospital's gynecology polyclinic and they were first informed about the subject matter and objective of the study. Participation in the study was voluntary and after the informed consents of the women who agreed to take part in the study were obtained, previously prepared questionnaires were completed by the investigators with face-to-face interview technique. This procedure lasted for about 15 - 20 min.

Development of the questionnaires

Personal Information Form prepared in line with the literature²⁻¹² and the Short Form-36 (SF-36) were used to collect data in the study. The Personal Information Form included questions about some socio-demographic characteristics of women, their practice of vaginal douching, and some variables believed to be associated with douching and their information about douching. Additionally, the SF-36

was used to assess quality of life and it was developed in 1992¹³. Its reliability and validity study in Turkey was conducted in 1999¹⁴. The questionnaire consists of 36 items and assesses quality of life in 8 domains (physical functioning, physical role functioning, social role functioning, emotional role functioning, mental health, vitality, bodily pain, and general health perceptions). Domain scores of the questionnaire range between 0 and 100, higher scores represent a better quality of life¹³. In this study, the women who replied "Yes" to the question "Do you perform vaginal douching?" were considered to "douche". The women who are actively engaged with a revenue-generating business were defined as "employed". Family income was assessed by the women as poor, average and high based on their own perceptions. Having menstruation in equal intervals was defined as "regular menstruation". If a woman experienced menstrual bleeding in equal intervals between 21 and 35 days, it was evaluated as "regular menstruation (normal)"; if the menstruation interval was less than 21 days, it was considered to be "short"; if the menstruation interval was more than 35 days, it was considered to be "long". Menstruation of less than 2 days was accepted as "short", between 2 and 6 days as "normal", and more than 6 days as "long"¹⁵. If a woman had pain in the abdominal, groin, and lumbar region on the day before the menstrual period and/or the first day of menstrual period, it was considered to be "dysmenorrhea"¹⁶. Additionally, the women who had pain during or after the sexual intercourse within last one year were regarded to have "dyspareunia". The women who had constant or intermittent pain in the lower part of abdomen and pelvis which is not associated with menstruation, pregnancy or sexual intercourse in the last 6 months were defined to have "chronic pelvic pain" in this study¹⁷. Additionally, the women with a physician-diagnosed genitourinary infection within last 1 yr were regarded to have "a history of genitourinary infection" in this study. The women who had urinary tract infection 4 or more times within last 1 yr were defined to have a "history of re-current urinary infection".

Ethical approval

Permission for the study was obtained by submitting a petition prior to collect data. Accordingly, the ethical committee permission dated 20/01/2014 with number 74897384 was obtained from the Turkish Institute of Public Hospitals. Legal

permission was also obtained from the Hospital Management. Participants completed an informed consent form in which they were assured of the confidentiality of their responses following which they provided informed consent that participation was voluntary and anonymous. All women gave their informed consent prior to their inclusion in the study. Rules specified in the Helsinki Declaration were observed in the data collection phase.

Data analysis

IBM SPSS Statistics 17.0 (SPSS/IBM Inc., Chicago, IL, USA) was used for all analyses. The statistical analysis was carried out using Chi-square and Mann-Whitney U test. Statistical significance was

set at $p < 0.05$. Conform to the normal distribution of scores of SF-36 quality of life scale were evaluated by means of the Shapiro-Wilk normality test. Because of the p -value is less than 0.05, Mann-Whitney U Test were employed in the statistical analyses.

Results

The ages of women in the study group ranged from 18 to 64 with a mean age of 33.46 ± 10.38 yrs. Of the women, 114 (18.0%) were aged 24 yrs and below, 276 (43.6%) were aged 25-34 yrs, 137 (21.6%) were aged 35-44 yrs, and 106 (16.7%) were aged 45 yrs and above. The number of women who douche was determined to be 261 (41.2%) in this study. The distribution of women who douche and do not douche

Table 1- Distribution of douching statuses of women by some socio-demographic and obstetric characteristics

Socio-demographic and obstetric characteristics	Vaginal douching status			Test value p
	No n (%)*	Yes n (%)*	Total n (%)**	
Age group				
≤ 24	59 (51.8)	55 (48.2)	114 (18.1)	
25-34	155 (56.2)	121 (43.8)	276 (43.6)	0.032
35-44	84 (61.3)	53 (38.7)	137 (21.6)	
≥ 45	74 (69.8)	32 (30.2)	106 (16.7)	
Educational level				
Primary school and lower	142 (65.1)	76 (34.9)	218 (34.4)	
Junior high-High school	177 (54.5)	148 (45.5)	325 (51.3)	0.046
University	53 (58.9)	37 (41.1)	90 (14.2)	
Working status				
Unemployed	294 (58.7)	207 (41.3)	501 (79.1)	
Employed	78 (59.1)	54 (40.9)	132 (20.9)	0.932
Family type				
Nuclear	289 (59.7)	195 (40.3)	484 (76.5)	
Extended	83 (55.7)	66 (44.3)	149 (23.5)	0.385
Family income				
Good	78 (52.7)	70 (47.3)	148 (23.4)	
Moderate	270 (60.7)	175 (39.3)	445 (70.3)	0.230
Poor	24 (60.0)	16 (40.0)	40 (6.3)	
Marriage period (year)				
≤ 4	87 (53.4)	76 (46.6)	163 (25.8)	
5-14	140 (56.9)	106 (43.1)	246 (38.9)	0.061
≥ 15	145 (64.7)	79 (35.3)	224 (35.4)	
Menopause				
No	319 (56.9)	242 (43.1)	561 (88.6)	
Yes	53 (73.6)	19 (26.4)	72 (11.4)	0.007
Number of pregnancy				
0	18 (46.2)	21 (53.8)	39 (6.2)	
1-2	184 (60.1)	122 (39.9)	306 (48.3)	
3-4	121 (56.3)	94 (43.7)	215 (34.0)	0.142
5 and ↑	49 (67.1)	24 (32.9)	73 (11.5)	
Number of birth				
0	40 (51.3)	38 (48.7)	78 (12.3)	
1-2	218 (59.7)	147 (40.3)	365 (57.7)	
3-4	93 (56.4)	72 (43.6)	165 (26.1)	0.031
5 and ↑	21 (84.0)	4 (16.0)	25 (3.9)	
Total	372 (58.8)	261 (41.2)	633 (100.0)	

Percentages were calculated *based on the line total and **based on column total.

by some socio-demographic and obstetric characteristics is given in Table 1. The number of premenopausal women who reported irregular menstruation was 144 (25.7%) and the number of women with dysmenorrhea was 269 (48.0%). The number of patients with dyspareunia, chronic pelvic pain and urinary incontinence was 168 (26.5%), 100 (15.8%) and 186 (29.4%), respectively. The number of women with a history of physician-diagnosed genital infection within last 1 yr was 419 (66.2%) and the number of women with a history

of urinary tract infection was 199 (31.4%). The distribution of women who douche and do not douche in the study group by some gynecological characteristics is given in Table 2. In the study group, there were 216 women (27.6%) who douche for cleaning and feeling comfortable and 7 women (0.9%) who do not know why they douche. Of the women who douche, 119 (45.6%) reported that they learnt it by themselves and 63 (24.1%) reported that they learnt it from their mother and elders. Almost half of the women (n=128; 49.1%) douched at least

Table 2-Distribution of vaginal douching statuses of women by their genitourinary diseases and gynecological characteristics

Some genitourinary diseases and gynecological characteristics	Vaginal douching status			Test value p
	No n (%)*	Yes n (%)*	Total n (%)**	
Menstrual regularity***				
Regular	239 (57.3)	178 (42.7)	417 (74.3)	0.713
Irregular	80 (55.6)	64 (44.4)	144 (25.7)	
Dysmenorrhea ***				
No	179 (60.3)	116 (39.7)	292 (52.0)	0.089
Yes	143 (53.2)	126 (46.8)	269 (48.0)	
Dyspareunia				
No	301 (64.7)	164 (35.3)	465 (73.5)	0.001
Yes	71 (42.3)	97 (57.7)	168 (26.5)	
Chronic pelvic pain				
No	325 (61.0)	208 (39.0)	533 (84.2)	0.009
Yes	47 (47.0)	53 (53.0)	100 (15.8)	
Urinary incontinence				
No	281 (62.9)	166 (37.1)	447 (70.6)	0.001
Yes	91 (48.9)	95 (51.1)	186 (29.4)	
Frequency of sexual intercourse				
At least 2-3 times a week	105 (49.3)	108 (50.7)	213 (33.6)	0.001
At least once a week	109 (53.2)	96 (46.8)	205 (32.4)	
At least once in two weeks	69 (74.2)	24 (25.8)	93 (14.7)	
Once in three weeks and longer	89 (73.0)	33 (27.0)	122 (19.3)	
Use of birth control method				
None	156 (67.5)	75 (32.5)	231 (36.5)	0.001
Modern method	192 (56.8)	146 (43.2)	338 (53.4)	
Traditional method	24 (37.5)	40 (62.5)	64 (10.1)	
History of physician-diagnosed genital infection in last 1 year				
No	151 (70.6)	63 (29.4)	214 (33.8)	0.001
Yes	221 (52.7)	198 (47.3)	419 (66.2)	
History of physician-diagnosed urinary tract infection in last 1 year				
No	268 (61.8)	166 (38.2)	434 (68.6)	0.024
Yes	104 (52.3)	95 (47.7)	199 (31.4)	
History of recurring urinary infection				
No	305 (59.8)	205 (40.2)	510 (80.6)	0.281
Yes	67 (54.5)	56 (45.5)	123 (19.4)	
Total	372 (58.8)	261 (41.2)	633 (100.0)	

Percentages were calculated *based on the line total and **based on column total.

***Except for menopausal women

1 time or less in a month. In the study group, 165 women (17.0%) reported that they douched after sexual intercourse, 46 women (4.8%) reported douching before sexual intercourse and 126 women

Table 3-Some characteristics of women who douched in the study group by their douching practices

Reasons for douching*	Number (%)
To feel comfortable and for cleaning	216(27.6)
To clean menstrual blood	69(8.8)
To prevent vaginal odor	93(11.9)
To eliminate vaginal itching and irritation	98(12.5)
To smell good for sexual partner	95 (12.2)
To prevent pregnancy	39(5.0)
Religious beliefs (e.g. to perform ablution)	142 (18.2)
Tradition (learnt from elders)	23(2.9)
No reason	7(0.9)
*Total	782(100.0)
Whom they learnt how to douched	
Mother/elders	63 (24.1)
By herself	119 (45.6)
Friend	35 (13.4)
Healthcare professional	27 (10.3)
Religious functionary/religion book	10 (3.8)
Spouse	7(2.7)
Total	261(100.0)
Frequency of douching	
Every day	33(12.6)
Once a week	100 (38.3)
Once a month and less	128 (49.1)
Total	26 (100.0)
Time of douching*	
After sexual intercourse	165(17.0)
After using the bathroom	88(9.1)
After taking a shower	90(9.3)
After menstruation	126(13.0)
After menstrual bleeding	85(8.8)
In the presence of vaginal odor	89(9.2)
In the presence of vaginal discharge	80 (8.3)
In the presence of vaginal itching	99(10.2)
Before sexual intercourse	46 (4.8)
After full ablution	100 (10.3)
*Total	968(100.0)
Substance used for douching	
Water	98 (37.5)
Soap and water	105 (40.2)
Other (water with vinegar, shower gel, shampoo, etc.)	58 (22.3)
Total	261(100.0)
Duration of douching	
<1 minute	43 (16.5)
1-4 minutes	133 (51.0)
≥ 5 minutes	85 (32.6)
Total	261 (100.0)

*Because of multiple reports in terms of reason and time for douching, percentage was calculated based on reasons and time for douching, not on the number of persons.

(13.0%) stated that they douched after menstruation. 105 women (40.2%) reported vaginal douching by using water and soap. Half of the women who douched stated that their administration duration was 1 to 4 min. The distribution of reasons for douching, whom they learnt douching, frequency of douching, when they douched, substance used while douching and duration of douching is given in Table 3. No difference was observed between women who douched and do not douched in terms of median scores obtained from 8 domains of SF-36 ($p>0.05$ for each domain). The distribution of median scores obtained by women who douched and do not douched from the domains of SF-36 is given in Table 4.

Discussion

In our study, frequency of douching was determined to be 41.2%. These results indicate that frequency of douching is high and similar in our country and other countries^{2,3,5,7,18,19,20,21}. The studies conducted show that there is a strong relationship between frequency of douching and age^{11,18,22}. The study of Funkhouser *et al.* (2002) determined that frequency of douching was 53.5% in those aged below 35 yrs and 79.2% in those aged above 55 yrs⁶. Similarly, an increase in douching along with the advancing age was reported in a Turkish study¹¹. However, some studies reveal that vaginal douching is a more common practice in adolescent girls and young women^{18,22}. In addition to the significant differences among the studies, frequency of douching was determined to be significantly lower in the women aged 45 yrs and above compared to other age groups in our study ($p<0.05$). Another factor affecting vaginal douching is the education level of women. Previous studies reported that the incidence of douching increased with lower education²¹. In the US, the frequency of douching was higher in high school graduates compared to university graduates²³. Several studies conducted in Turkey indicated that there was a relationship between education level and frequency of douching^{5,7,11}. Unlike the reported study results, the frequency of douching was determined to be lower in women whose education level is primary school and lower ($p<0.05$).

It is known that douching is more common in women with poor economic conditions. There are many researchers reporting similar results^{5,7,11,22}. No relationship was determined between family income and the frequency of douching in our study ($p>0.05$).

Table 4-Distribution of median scores obtained from the domains of SF-36 by women who douche and do not douche in the study group

Domains	SF-36 scores		Test value z; p
	Vaginal douching status		
	No (n=372) Median (min-max)	Yes (n=261) Median (min-max)	
Physical functioning	80.0 (0.0-100.0)	80.0 (0.0-100.0)	1.540; 0.123
Role-physical	100.0 (0.0-100.0)	100.0 (0.0-100.0)	1.800; 0.072
Bodily pain	65.0 (0.0-100.0)	65.0 (13.7-100.0)	1.229; 0.219
General health perception	57.0 (0.0-97.0)	57.0 (0.0-100.0)	1.424; 0.154
Vitality	50.0 (0.0-95.0)	50.0 (0.0-100.0)	0.592; 0.554
Social functioning	62.5 (0.0-100.0)	62.5 (0.0-100.0)	0.079; 0.937
Role-emotional	100.0 (0.0-100.0)	100.0 (0.0-100.0)	1.424; 0.154
Mental health	54.5 (0.0-100.0)	59.1 (0.0-95.5)	1.066; 0.286

In Kukul's study (2006) assessing the relationship between the frequency of sexual intercourse and douching, there was no significant relationship between the same⁷. However, in the study of Ege *et al.* (2007), the high frequency of vaginal douching was observed in women who had a high frequency of sexual intercourse⁵. Similarly, the frequency of douching was determined to increase along with the frequency of sexual intercourse ($p < 0.05$). Kisa & Taskin (2010) stated that the rate of conception for 3 to 4 times was 32.7% in women with vaginal infection²⁴. A statistically significant relationship was determined between vaginal douching and number of pregnancy in the study of Hacialioglu *et al.* (2009)²⁵. In our study, the frequency of douching was lower in those who got pregnant 4 times or more ($p < 0.05$). Furthermore, Kukul (2006) found no relationship between the contraception method used and the frequency of vaginal douching⁷. In the study of Karaer *et al.* (2005) upon comparison of women who douche and do not douche, the women who douche had a higher level of using a contraception method and the frequency of douching was higher in those who use intrauterine device as a contraception method¹¹. Furthermore, Sen & Mete (2009) found that 28.5% of those who do not use a modern contraception method use vaginal douching as a contraception method²¹. Consistently, a higher frequency of douching was determined in women who use a traditional contraception method in our study ($p < 0.05$).

Literature emphasized that douching increases infection susceptibility²⁶. Zhang *et al.* (1997) determined in their meta-analysis that douching increases the risk of pelvic inflammatory disease by 73%¹². While Shaaban *et al.* (2013) found that approximately three-fourths of women who douche (73.0%) had genital infection¹⁹, other studies determined that women who douche had genital

infection symptoms frequently^{4,5,11,12}. Other studies found that development of bacterial vaginosis is more likely in women who douche and higher frequency-of douching increases the possibility of infection^{3,27}. In our study, a history of physician-diagnosed genital infection was higher in women who douche compared to those who do not douche ($p < 0.05$, for each).

Vaginal douching is a practice learnt from mother, sister or other female relatives and it is passed down from generation to generation through social learning^{21,28}. Rupp *et al.* (2006) stated that 47.0% of women learnt how to douche from their mothers²⁸. In the study of Shaaban *et al.* (2013) women stated that they learnt douching from their mothers, friends, and neighbors and sometimes from a nurse or physician¹⁹. Consistently, women in our study stated that they learnt douching by themselves (45.6%) and, to a lesser extent, from their mothers/elder relatives (24.1%). These results suggest that women in our region need to be trained in this regard and healthcare professionals should also be informed about the same through in-service training. Studies performed indicated that healthcare professionals have a great influence in this regard²⁹.

As for the frequency of vaginal douching, Sen & Mete (2009) reported that 62.8% of the women douched 1-9 times a week²¹. Kukul (2006) reported that 28.9% of the women douched once a week⁷. Koblin *et al.* (2002) reported that 46.1% of the women in America douched 2-4 times a month²². This is a higher rate than the rate reported in other studies, where the frequency of douching varied. In our study, almost half of the women (49.1%) were determined to douche at least once or less in a month.

Studies conducted suggest that women douche most frequently before menstruation, after menstruation, after sexual intercourse and when they have vaginal symptoms such as odor and discharge¹⁹.

Kisa & Taskin (2010) reported that the infection risk was twice as common among women who douche particularly after sexual intercourse²⁴. Based on a review of studies conducted abroad, it was found that women most frequently douche after menstruation and sexual intercourse¹⁸. In Turkey, most of the women were determined to douche after sexual intercourse^{7,20}. In our study, 17.0% of women reported that they douche after sexual intercourse and 13.0% reported douching after menstruation. The results of this study as well as other studies suggest that women most frequently douche after sexual intercourse. Vaginal douching is affected from socio-cultural and religious values on sex, personal hygiene, health and disease. Vaginal douching is common in cultures that define female body, menstruation and sexual intercourse as dirty and in these cultures women douche in order to feel clean^{3,20}. Consistently, women in our study stated that cleaning and feeling comfortable are their primary reason for douching (27.6%). The solutions used for douching decrease the number of bacteria in vaginal flora and cause proliferation of pathogen microorganisms²⁹. For douching, women prefer water alone or soapy water in Turkey^{20,21}, commercial douching products in the US^{18,23,28}, and home-made products (e.g. lemon, saline and vinegar) in Asian and African countries³⁰. In our study, soapy water was used for douching the most (40.2%). It is noteworthy that water or soapy water is used in Muslim countries whereas special products are used in Western countries for douching. Upon review of the studies assessing duration of douching, Mishra *et al.* (2006) stated that more than one third of women douche less than 1 min and Zhang *et al.* (1997) found that women douche from 1 to 5 min^{12,30}. Consistently, half of the women who douche stated that they performed for 1 to 4 min in our study. Genital infections affect the sex life, family life, daily activities and psychology of women adversely, and bad odor and genital itching resulting from the genital infections cause social isolation of women, have a negative impact on their social lives and decrease their quality of life. In the literature, vaginal douching is considered the reason of many adverse conditions concerning woman health¹¹. It is therefore an important issue that should be considered. However, in our study, no difference was found between women who douche and do not douche with regard to quality of life ($p>0.05$). Although many studies were

conducted in this regard, there are still issues not studied enough and no similar studies were found upon review of the subject.

Conclusion and suggestions

Almost half of the women in our study douche. Genital infections and urinary infections were more frequently observed in women who douche. There was no difference with regard to quality of life between women who douche and do not douche. It would be advantageous for healthcare professionals to support women in acquiring proper behavior about vaginal douching and for educating them about the fact that douching is unfavorable. More extensive studies are required to demonstrate the relationship between douching and quality of life.

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Authors' Note

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Authors' contributions

Study concept and design: Sahin S, Abay H, Unsal A, Kaplan S, Pinar G

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Analysis and interpretation of data: Unsal A, Sahin S

Preparation of manuscript: Unsal A, Sahin S, Kaplan S, Abay H, Pinar G

All authors have read and approved the final version of the manuscript.

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