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Changes in Attitudes towards Organ Donation among Bosnian Immigrants in Sweden from Gender Perspective

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Abstract

Objectives. The present study aimed to assess changes in the perception of and willingness to participate in organ donation (OD) among immigrants from Bosnia and Herzegovina living in Sweden from the perspective of gender differences. **Materials and Methods.** A cross-sectional study with 60 participants born in Bosnia and Herzegovina and living in Sweden was performed. Data were collected using a self-administrative questionnaire, providing demographic characteristics, information about opinions, awareness, and knowledge on the donation process and religious approach to the subject, willingness to donate/receive organs, and possession of a donor card. **Results.** Our results showed significant differences between genders regarding the definition of transplantation (P<0.0001), information about OD (P<0.0001), knowledge (P<0.0001) and importance of OD (P<0.003), religious permitting (P=0.0001), and religious opposing (P=0.0007) to OD. Furthermore, a significant difference was observed regarding the preferred recipient (P=0.0062) and the possession of the donor card (P<0.0001). Regression analysis showed that female gender and higher income were statistically significant in prediction of positive attitudes toward OD (P=0.0027, P=0.0002, respectively). **Conclusion.** Change of social background and integration into Swedish society undoubtedly led to change in the attitudes toward OD, regardless of the perspective of gender differences. However, women were found to have more positive attitudes toward OD.

Key Words: Organ Donation ▪ Gender Difference ▪ Education Level, Knowledge ▪ Transplantation.

Introduction

Organ transplantation (OT) together with organ donation (OD) represents one of the most successful advances in modern medicine, that gives patients the opportunity for a new life and survival through these processes (1). Organ donation (OD) is a personal choice and many ethical, legal, medical, organizational, and social factors are involved (2, 3).

In general, organs can be utilized from either living or deceased donors. The shortage of donated organs is a globally increasing problem. It becomes clear that the only way to overcome this issue is to increase the number of deceased donors (4). In 2018 organ donations globally reached the number of 146 840 (5). In 2019, before the global pandemic of SARS-COV-2, Spain had the highest number of deceased donors per million population (pmp) in Europe (49.6 pmp), followed by Croatia (36.4 pmp). At the same time, Turkey had the highest number of living donors (53.2 pmp). Meanwhile, Sweden had 19.2 deceased and 14.5 living donors pmp, far less than leading countries. Along with Kosovo, one of the lowest OD rates in Europe in 2017 had Bosnia and Herzegovina with 0.9 deceased and 5.9 living donors pmp (6).

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Many reasons and factors affect a person's decision to be an organ donor. Religion plays an important role, as well as race, gender and age (7-12). In most cases, better education and higher salaries lead to more organ donations (11, 13). Immunological factors and other non-immunological issues, including the organ size (14), donor's age (15), and weight (16), may also be involved. Other more specific factors as gender may also affect a person's stance and decision to donate an organ (17). Studies showed that women are more willing to donate but less willing to receive transplantations (18, 19). There are gender differences regarding OD in the context of heart (20), lung (21), kidney (22), and bone marrow transplants (23).

It is presumed that gender differences are a multifactorial issue. There is a greater need for transplants due to end-stage disease in men as they are more prone to hypertension and ischemic heart disease (20). This also means that they more often represent borderline or ineligible candidates for OD (20-22). However, women appear to know less about transplantation. This may be because they rarely undergo aggressive medical treatment but it should also be taken into account the different roles that women play in society, the economy, and culture (24). These differences are pronounced through the importance of achieving a suitable social climate for donation. Subsequently, a change in the social environment can positively influence the attitudes and perception of available information.

The present study aimed to assess changes in the perception of and willingness to participate in OD among immigrants from Bosnia and Herzegovina living in Sweden from the perspective of gender differences.

Methods

Study Design

The study was conceived as a quantitative cross-sectional study with a descriptive design using data from a self-administered questionnaire.

Participants

A study was performed among the participants from Bosnia and Herzegovina living in two cities in the western part of Sweden. The inclusion criterion was participants who were older than 18 years and willing to participate. We excluded individuals with cognitive impairment and individuals who required OT. We asked 72 people to participate in the present study, of which 12 declined due to lack of time and unwillingness. As a result, our final sample included 60 participants, 30 men and 30 women. The questionnaires and all communication were carried out in Bosnian. All the participants provided signed informed consent before completing the questionnaires. The participation was voluntary, and respondents could withdraw their consent at any time without incurring penalties or any loss of access to services. The demographic and clinical characteristics of the informants are shown in Table 1.

Data Collection

The questionnaire was specifically designed and administrated by the authors to achieve the aim of this study. The questions were organized into four sections. The first section contained sociodemographic details of the participants, such as age, gender, educational level, religion, income and marital status. The second section focused on the participants' awareness regarding OD, legislation, their opinions, promotion of OD and sources of information on the subject. The third section contained the question about participants' medical knowledge, knowledge about the donation process, possession of donor card, together with knowledge about a religious approach to OD. The last section of the questionnaire aimed to attain information about participants' willingness to donate their organs. In the last part, the participants were asked to write whether they would donate organs to family members, relatives, neighbors, or to anybody. Possession of a donor card was taken as

the main indicator of a positive attitude towards OD. Validation was performed through steps of establishing face validity (experts evaluated whether the questions effectively capture the substance of questionnaire), pilot test, reevaluation of data, principal components analysis, and internal consistency check. Index of content validity (S-CVI/UA) was 0.82. The authors collected the data using face-to-face interviews, in a private room, and those participants were then included in the study population. Completing the questionnaire took between 10-15 minutes.

Statistical Analysis

Data were provided as absolute (N) and relative (%) numbers D'Agostino-Pearson test was used for the data distribution analysis. Based on the distribution of results, a comparison between the groups was performed by the Student´s t-test for normal distribution data and Fisher exact test for categorical variables. Additionally, binary logistic regression analysis was performed. Statistical significance was defined as $P<0.05$. Statistical analyses were performed using MedCalc Statistical Sofware for Windows, version 19.0.3. (MedCalc Software, Mariakerke, Belgium).

Ethics Statement

Since no physical intervention and no information on individual health issues were involved in the study, there was no need to involve the ethical board, according to Swedish law (Swedish Health Care Act) (25). The principles of the World Medical Association Declaration of Helsinki (26) were followed carefully. The personal data were protected, i.e., names and personal identification numbers were not stated in the recordings or any publications.

Results

A total of 60 participants, 30 men, and 30 women participated in the present study. The mean age of the men and women was 41.23 and 40.49 years, respectively. Although the number of illiterate men was higher and men with a high school education were significantly lower [2 (6.7%) vs. 0 (0%), 14 (47%) vs. 22 (73%), respectively], there was no significant difference between the groups concerning the education level ($P=0.065$). Also, women had a higher income and 24 (60%) of them were unmarried. At the same time, 27 (90%) men were unmarried. All the participants in the present study were Muslims. The majority were employed with an income of between 200 000 and 300 000 Swedish kronor (SEK). However, a significant difference between genders was observed regarding the employment status only ($P=0.003$) (Table 1).

The responses concerning actual and self-perceived knowledge and opinions regarding OT and OD are presented in Table 2. In the question regarding the definition of transplantation, 14 (47%) men stated that transplantation is a medical procedure for the removal of tissue or organs from the body of a deceased person, while 29 (96%) women stated that it is a medical procedure for the removal of tissue or organs from the body of a living person ($P<0.0001$). Our result shows statistically significant differences between male and female participant´s responses and the largest difference was observed regarding the answer to the question on information about OD, where 18 (60%) of male respondents answered that they did not have sufficient information about OD and OT, while 22 (73%) female respondents stated the information they had received about OD and OT was above average ($P<0.0001$) (Table 2).

A similar ratio was found related to the self-perceived knowledge, where women indicated they had excellent knowledge about OD and OT in 20 (66.7%) of responses, while 17 (56.7%) men responded they had poor knowledge of OD and OT ($P<0.0001$). A similar difference was noticed regarding opinions about the importance of factors for OD, where 11(36.7%) men thought that the health condition of the recipient is the most important factor, while 23 (76.4%) women thought it´s a kinship with the organ donor ($P=0.0039$). Our results showed that there is no difference between informants about the implications of OD ($P=1.00$) (Table 2).

Table 1. Demographic and Clinical Characteristics of the Informants

Characteristics	Male (N; %)		Female (N; %)		P
Gender	30	100	30	100	
Age (years)					
< 25	2	6.7	2	6.7	
25-40	2	6.7	9	30.0	
41-55	8	26.7	13	43.3	1.00*
56-70	16	53.3	5	16.7	
> 70	2	6.7	1	3.3	
Education					
Illiterate	2	6.7	0	0.0	
Primary school	13	43.3	8	26.7	0.065†
High school	14	46.7	22	73.3	
Degree/above	1	3.3	0	0.0	
Marital status					
Unmarried	27	90.0	24	60.0	0.163†
Married	3	10.0	6	40.0	
Religion					
Muslim	30	100	30	100	
Other	0	0	0	0	
Employment					
Employed	19	63.3	24	80.0	
Unemployed	0	0.0	3	10.0	0.003†
Retired	10	33.3	1	3.3	
Other	1	3.3	2	6.7	
Income (SEK)					
<100,000	11	36.7	5	16.7	
100,000 - 200,000	5	16.7	6	20.0	
201,000 - 300,000	6	20,0	8	26.7	1.00*
301,000 - 500,000	7	23.3	10	33.3	
>500,000	1	3.3	1	3.3	

*Student´s t-test; †Fisher exact test; SEK=Swedish kronor.

The responses regarding the usefulness, support for, risks, and religious issues regarding OD are presented in Table 3. When asked whether they believe OD is useful and should be promoted, 16 (53.3%) men and 27 (90%) women replied that they completely agreed, while 8 (26.7%) men and two (6.7%) women said that they agreed. Although this was a statistically significant difference, the vast majority of both men and women (80% and 96.7%, respectively) were still generally in agreement that OD is useful and should be promoted more intensively. Only 5 (16.7) men and one (3.3%) woman replied "I do not agree or disagree" that OD is useful (P=0.0179) (Table 3).

Concerning the question about accepting organs from people who are of other religions, 27 (90%) women replied positively, compared to 19 (63%) men (P=0.0297). No statistically significant differences between the groups were registered in the replies to the other questions in Table 3.

Responses related to the religious aspects of OD are presented in Table 4. The result of our study showed gender differences in the responses to all the questions. The greatest difference was noticed in the responses about whether their religion permitted OD, where 21 (70%) women and 4 (13.3%) men responded that their religion allows the OD, regardless of the consequences for the person who makes the donation. Furthermore, 15 (50%) men and 3 (10%) women answered that they were not sure whether their religion allows OD (P=0.0001) (Table 4).

Table 2. Actual and Self-Perceived Knowledge and Opinions Regarding Organ Donation and Transplantation

Question / Statement	Male (N; %)		Female (N; %)		P*
How do you define transplantation?					
As a medical procedure between a deceased and a sick person	14	46.7	1	3.3	< 0.0001
As a medical procedure between a living and a sick person	7	23.3	29	96.7	
As a medical procedure between a living or a deceased person to a sick person	7	23.3	0	0.0	
As a medical procedure without reason	14	46.7	1	3.3	
Have you heard of organ transplantation?					
Yes	28	93.3	28	93.3	0.388
No	2	6.7	2	6.7	
What are the most important factors in organ donation?					
The age of the recipient	9	30.0	3	10.0	0.0017
The relationship with the donor	9	30.0	23	76.7	
Health condition	11	36.7	4	13.3	
Religious affiliation	1	3.3	0	0.0	
How do you rate your knowledge regarding organ donation?					
Poor	17	56.7	1	3.3	<0.0001
Good	11	36.7	9	30.0	
Excellent	2	6.7	20	66.7	
How do you rate the information you received about organ donation?					
Insufficient	18	60.0	1	3.3	<0.0001
Satisfactory	11	36.7	7	23.3	
Above average	1	3.3	22	73.3	

*Fisher exact test.

Table 3. Attitudes Towards Usefulness, Support for, Risks, and Religious Aspect of Organ Donation

Question / Statement	Male (N; %)		Female (N; %)		P*
Organ donation is useful.					
I completely agree	16	53.3	27	90.0	0.0179
I agree	8	26.7	2	6.7	
I neither agree nor disagree	5	16.7	1	3.3	
I disagree	1	3.3	0	0.0	
I completely disagree	0	0.0	0	0.0	
Do you support organ donation?					
Yes	26	86.7	27	90.0	0.23
No	1	3.3	3	10.0	
I don't know	3	10.0	0	0.0	
Would you agree to an organ transplant if your life is in danger?					
Yes	22	73.3	27	90.0	0.2309
No	2	6.7	2	6.7	
I don't know	6	20.0	1	3.3	
Would you accept organs from a person of another religion?					
Yes	19	63.3	27	90.0	0.0297
No	3	10.0	2	6.7	
I don't know	8	26.7	1	3.3	
Would you donate organs to a person of another religion?					
Yes	21	70.0	27	90.0	0.0755
No	2	6.7	2	6.7	
I don't know	7	23.3	1	3.3	

*Fisher exact test.

Table 4. Religious Aspects of Organ Donation, Attitudes Towards Organ Donation and Donor Card Possession

Question	Male		Female		P*
Is organ donation against your religion?					
Yes	2	6.7	1	3.3	0.0001
No	15	50.0	28	93.3	
I don't know	13	43.3	1	3.3	
What are the reasons why you are against organ donation?					
Fear of manipulation	5	16.7	1	3.3	0.0006
Untouched body after death	4	13.3	18	60.0	
Religious beliefs	1	3.3	0	0.0	
I have not thought about donation.	20	66.7	11	36.7	
To whom would you donate an organ?					
Family	12	40.0	4	13.3	0.0026
Friends	2	6.7	0	0.0	
Anybody	12	40.0	25	83.3	
I won't donate	4	13.3	1	3.3	
What is the religious aspect of organ donation?					
Same religion	1	3.3	5	16.7	0.0002
Other religion	16	53.3	24	80.0	
I don't know	13	43.3	1	3.3	
Does your religion allow organ donation?					
Yes, regardless of the consequences	4	13.3	21	70.0	0.0001
Yes, if I can survive without the organ	8	26.7	6	20.0	
Yes, after death	1	3.3	0	0.0	
No, not allowed	2	6.7	0	0.0	
I am not sure	15	50.0	3	10.0	
Do you know anyone who has donated organs?					
Relatives	3	10.0	13	43.3	0.0026
Friends	5	16.7	1	3.3	
Acquaintances	2	6.7	5	16.7	
I don't know anyone who has donated	0	0.0	2	6.7	
I don't know	20	66.7	9	30.0	
Do you own a donation card?					
Yes	1	3.3	20	66.7	<0.0001
No	29	96.7	10	33.3	
What is the character of a donor card?					
Informative	24	80	29	96.7	0.1027
Binding	6	20	1	3.3	

*Fisher exact test.

Concerning the question about religious opposition to OD, 15 (50%) men and 28 (93.3%) women responded that their religion and religion, in general, did not oppose the OD, while 13 (43%) men and one (3,3%) woman indicated that they did not know the answer to this question (P=0.0007). In the question about the reasons why the informants were against OD, the answers differed concerning gender, where 20 (66.7%) men and 11 (36.7%) women had not thought about OD and 4 (13.3%) men and 18 (60%) women believed that the body should be intact after death (P=0.006). Furthermore, 25 (83.3%) women and 12 (40%) men replied that they would donate their organs to anyone, while 12 (40%) men and 4 (13.3%) women stated that they would donate to their family members (P=0.002) (Table 4).

As many as 24 (80%) women and 16 (53.3%) men replied that the person to whom they donate their organs could have different religious

affiliation, but, at the same time, 13 (43.3%) men and one (3,3%) woman stated that they had not thought about OD (P=0.0002). Moreover, 20 (66.7%) men and 9 (30%) women replied that they did not know anyone who had donated organs, while 13 (43.3%) women and three (10%) men indicated that they did know an organ donor and that this person was a relative (P=0.0062). Ownership of a donor card was registered in 20 (66.7%) women and only one man (3%) (P<0.0001). Responses about whether the donor card was an informative or a binding statement differed, where 29 (96.7%) of women and 24 (80%) men stated that the donor card was an informative statement (P=0.103) (Table 4).

Due to observed differences between males and females, binary logistic regression analysis was performed for adjusting the effect of these differences in comparing female and male attitudes toward OD. Logistic regression analysis showed that sex and income as independent values were statistically significant in prediction of positive attitudes toward OD (possession of donor card) (P=0.0027, P=0.0002, respectively), while age and education were non-significant independent values (P=0.303, P=0.135, respectively). Also, there is a positive correlation between sex and income and attitudes towards OD (r^2=0,299, r^2=0,142, respectively).

Discussion

The present study is the first of its kind in Sweden that investigates the gender differences in perception and willingness regarding OD. The questionnaire was specifically divided into sections focusing on various information about the participants, their sociodemographic characteristics, and personal beliefs.

A strong correlation between the education level and OD was observed in previous studies (11, 12). This issue is further complicated if gender differences are taken into account. The results of the present study showed that all the illiterate participants were male. The number of women with a high school education was higher compared to the men, furthermore women had higher incomes than men. When it comes to marital status, 27 (90%) men and 24 (60%) women were unmarried. These results were initially unexpected, due to the fact that traditionally in Bosnia and Herzegovina men are more often highly educated and have a higher income than women, while the ratio between married and unmarried is roughly the same. A possible explanation could be that the majority of the respondents grew up, graduated, and started their first jobs in Sweden and that, apart from inheriting the culture from their home country, they also adopted the Swedish culture and behavioral models. Our findings contrast those in other studies, which showed that men were more educated and informed than women and subsequently had more information and more knowledge about OD (27, 28).

Also, we looked at actual and self-perceived knowledge and opinions regarding OT and OD depending on gender. The present study demonstrated that men and women perceived definitions of OT differently. We found a statistically significant difference in being informed and knowing about OD between genders, where 18 (60%) men answered that they were not sufficiently informed about OD, while 22 (73%) women stated their above-average satisfaction with available information. These findings are comparable with the results of study performed by Sipkin et al., in which the majority of all the informants were adequately informed about OD (29). Knowledge relating to OD was higher in women, 66% vs. 56% respectively. Despite reported gender differences, knowledge about OD was high in both men and women. Our findings are similar to those in a mentioned study which showed that 41.5% of all informants had adequate knowledge of OD (29).

Gender differences were also notable regarding the perception of important factors related to OD. Our results showed that 11 (37%) men considered the health of the recipient´s body as the most important factor, while 26 (77%) women stated that the most important factor is the kinship of the organ donor. Our study also revealed gender differences in the perception of usefulness and support

towards OD, with 16 (53.3%) men and 27 (90%) women replied that they completely agreed, while 8 (26.7%) men and 2 (6.7%) women agreed that OD is useful and should be promoted. The social and cultural roles of men and women differ, and they expressed different opinions regarding the usefulness of and support for OD. Women generally feel more responsible and act as caregivers, and as a result, they are much more likely to donate their organs than men. In many countries, the traditional role of women also includes looking after family members when they are ill (30, 31).

Religious aspects of OD were described differently according to gender. The women had more knowledge of their religion's permissive attitude towards OD (70% vs. 13%), and the majority of women (90%) knew that their religion did not oppose the donation of organs. In the question about reasons why the informants were against OD, the answers differed between the genders. Here, 20 (67%) men and 11 (37%) women stated that they did not think about OD, and 4 (13%) men and 18 (60%) women believed that the body should be intact after death. In other studies, men were found to refuse to donate their organs after death more often than women (32), as men were more worried about their physical integrity, believing that desecrating their bodies would bring them misfortune (33). The results of our study correspond to other studies that emphasize the need for a simpler consent system where family members could not overrule their donation decision, greater public awareness for OD, and the availability of more information on the OD process (34).

Gender differences were also demonstrated in the question about the person to whom the informants would donate their organs, where 25 (83%) women and 12 (40%) men indicated that they would donate their organs to anyone, while 12 (40%) men and 4 (13%) women would donate to their family members. Motherhood may also give women a sense of duty to volunteer for OD to save their spouse, children, and other family members. Our findings are in line with those from another study which shows that sisters, mothers, and wives more frequently donate their living organs to children, brothers, fathers, and husbands (30, 35). An interesting study showed that more than 30% of eligible wives were willing to donate their organs to their husbands, while only 7% of husbands were willing to donate their organs to their wives (36). Moreover, 24 (80%) women and 16 (53%) men were willing to donate to people with other religious affiliations and 13 (43%) men and one (3,3%) woman responded that they did not think about donating organs at all. The majority of the women did not know anyone who had donated their organs.

The results of the present study also revealed gender differences in the ownership of donor cards. In our study, 20 (66%) women owned a donor card, as opposed to only one man. The vast majority of women thought that the donor card was informative. Our findings are in line with those in previous studies, which showed that women were more willing to sign a donor card and donate their organs (32, 37). However, previous studies from low-income and under-developed countries reported results that are contrary to our findings (38, 9).

Regression analysis showed that female gender and higher income were statistically significant in prediction of positive attitudes toward OD. It is difficult to give a specific reason for a better response toward OD in women. We believe that women are more motivated, altruistic, as well as more ready to help a close family member or a person outside the family to survive. Furthermore, we shouldn't forget that motherhood and care for the family play a significant role in almost every culture of the world.

The effect of religion on the attitude towards OD becomes even more complex when gender differences are taken into account. Almost all world religions basically have a positive attitude towards OD. Islam considers OD as an expression of altruism and generosity and encourages Muslims to donate their organs (39). Some studies showed that religion is associated with a negative attitude towards OD (40). Recent survey demonstrated that even Islamic religious officials are unsure about compliance of OD and their religious belief (41).

Despite this, Gross et al. reported a positive impact of religion on attitudes towards OD. This

is especially pronounced in cases of sufficiently informed participants, who had close next of kin who were aware of their attitudes, had contacts with transplanted person, and believed in an existence after death (42). All this suggests that religious issues play a significant role and affect OD much more than we believe.

To the best of our knowledge, this is the first study of its kind among immigrants in Sweden. However, our study has some limitations, such as its cross-sectional design and the relatively small sample. This could make it difficult to generalize the findings of our study. The other limitation of the present study could be fact that the first author has the same ethnicity as the informants, which could have affected informants' responses. At the same time, Sweden remains one of the clearest examples of a multiculturalism society in Europe and a positive immigrant integration model (43). We believe that research of this kind among immigrants can contribute to their better integration into society, but also improve the necessary changes in various social aspects, including OD, in the country of origin. The experiences of other countries indicate that efforts to increase the OD rate should be focused on children and young individuals (44).

In achieving a suitable social climate for donation, gender differences may be very important, both among potential donors and transplant recipients. This can be especially important among immigrants coming from traditional societies such as Bosnia and Herzegovina. Also, it is important to identify the part of the population in which the implementation of educational measures would give the most results in the promotion of OD.

Healthcare professionals and governmental and non-governmental organizations should take the initiative actively to motivate people to give their consent and thus promote OD to a greater extent.

Conclusion

Different socioeconomic factors, cultural beliefs, a higher level of religiousness and knowledge about OD may result in a better perception of and willingness to participate in OD. Our results demonstrate how the change of social climate influences gender differences in the perception and willingness to participate in OD process, as women were found to have more positive attitudes toward this issue. Change of social background and integration into Swedish society undoubtedly led to change in the attitudes toward OD, regardless of the perspective of gender differences. Improving knowledge about all aspects of OD and the reduction in prejudice regarding these issues would make awareness and desire for OD even greater.

What Is Already Known on This Topic:

The present study deals with the public health topic of organ donation. As we know, organ donation is a life-saving concept affected by the legislation, cultural and ethnic background. Studies showed the lack of knowledge regarding this problem among the population, as one of the main reasons for inadequate acceptance of donation in public opinions. Gender differences may be very important, not just among potential donors, but also among transplant recipients.

What This Study Adds:

The present study aimed to assess gender differences, along with education level, perception, and willingness towards organ donation among Bosnian immigrants living in Sweden. The results of this study highlight the importance of achieving a suitable social climate for donation. It seems that religious and traditional concerns affect this process more than we want to believe. Subsequently, a change in the social environment can positively influence the attitudes and perception of available information. In conclusion, we can say that evaluation of this knowledge is needed to develop more efficient educational programs. To our knowledge, this is one of the first studies of its kind and can show the direction of further development of public promotion models regarding organ donation.

Ethical Approval: Not required. The consent of the Ethics Committee for conducting the research was not sought since this was a non-clinical observational study. The respondents' participation was voluntary.

Authors' Contributions: Conception and design: FK; Acquisition, analysis and interpretation of data: FK, JA and KG; Drafting the article: JA and KG; Revising it critically for important intellectual content: FK and JA; Approved final version of the manuscript: all authors.

Conflicts of interest: The authors declare that they have no conflict of interest.

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