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The role of basic psychological needs on volunteering and national responsibility during the COVID-19 pandemic: Results from the context of Saudi Arabia

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The COVID-19 pandemic has spread throughout the world, leading to school and university closures. A practical response to minimize the negative effects of the COVID-19 pandemic depends largely on students' voluntary adherence to government guidelines as well as their participation in volunteering activities and their willingness to take national responsibility. From the perspective of the self-determination theory (SDT) of motivation, it is postulated that for students to willingly participate in volunteering activities and take national responsibility, three basic psychological needs (BPN) of autonomy, competence, and relatedness must be fulfilled. We investigate the extent to which satisfying these needs is associated with an increase in *searching for opportunities to volunteer*, *sense of national responsibility*, and *the quantity of volunteering made*. A total of 215 Saudi male and female participants were involved in the study. Our analysis showed that the three needs are satisfied among the sample and that no gender differences existed. Regarding the correlation analysis, the results revealed that the three BPN were significantly correlated with the sense of national responsibility and searching for opportunities to volunteer but not with the quantity of volunteering made. The results highlighted the key role that the three BPN play in understanding Saudi students' levels of participation in volunteering and taking on national responsibility. The results are discussed in light of the pandemic context.

KEYWORDS

basic psychological needs, self-determination theory, COVID-19, volunteering, national responsibility

Introduction

The discovery of COVID-19 has led to a pandemic that has affected education, finance, and society around the globe. Several studies have already been published by researchers examining various aspects of this pandemic, particularly on the effects of the pandemic on the economy, society, and education and on physical and mental health. Self-determination theory (SDT) is a theory of motivation that highlights the three basic psychological needs (BPN) of relatedness, competence, and autonomy. Fulfilling the three psychological needs can enhance individuals' performance positively and motivate them to engage in voluntary activities (Ryan and Deci, 2000, 2017; DeCaro et al., 2017; Martela et al., 2021). From the perspective of SDT, it can be hypothesized that individuals' psychological experiences can make a significant difference in how they react to their community and participate in it during challenging situations such as the COVID-19 pandemic (Alamer, 2022b). Accordingly, this paper aims to investigate the effect the BPN have on levels of volunteering and national responsibility among Saudi students during COVID-19 pandemic. Path analysis is selected to examine the ways in which the BPN are related to the outcomes.

Literature review

Saudi response to the pandemic

The spread of COVID-19 motivated people around the world to confront extraordinary challenges to effectively keep up their health care, social lives, and education. Different countries have actualized measures, such as quarantine, curfews, and social isolation, to mitigate the impact of the virus. The Kingdom of Saudi Arabia 2030 vision aims to foster volunteerism among citizens. Therefore, concerted efforts are required to develop norms, processes, and institutions. In the pandemic, its contribution began by calling for The Group of Twenty (G20) for a virtual summit in which international leaders' economic collaboration reflects the global efforts against COVID-19. Consequently, the Ministry of Health's preparedness and response to the pandemic was by imposing public health precautionary measures and suggesting guidelines adopted from The World Health Organization (WHO) plan to support the country. As a part of the Kingdom's vision 2030, The Ministry of Human Resources and Social Development launched a work volunteering platform that provides opportunities depending on the volunteers' experiences and issues volunteers' certificates. Furthermore, The Ministry of Education turned the pandemic into an opportunity by collaborating with the Ministry of Human Resources and Social Development on the

volunteering platform. The domains of volunteer work were logistical volunteer and humanitarian services, psychological and social counseling awareness, and health volunteering (Ministry of Health, 2020; UNDP, 2020; UNESCO IITE, 2020).

In the Saudi context, students' voluntary experience was flourishing during the pandemic. Mousa et al. (2021) exploratory cross-sectional study was conducted to identify the obstacles deterring students from volunteering, and to determine the benefits and awards of volunteering in COVID-19 vaccine centers in AlAhsa. The study involved 385 Saudi students from various health colleges and found that 92.2% of the participants volunteered to get tangible benefits while 74.5% volunteered to 61% to have fun. More importantly, the study showed that 24.4% males have volunteered, compared with 75.6% of females. Accordingly, in the present study we might expect some gender differences similar to what Mousa et al. (2021) have observed.

Basic psychological needs and individuals' response to the pandemic

Apart from this background, it can be postulated that the three BPN of autonomy, competence, and relatedness are essential ingredients for individuals' functioning and wellness during the COVID-19 pandemic (Clark et al., 2020; Morbée et al., 2021).

The first basic need is *autonomy*, which reflects experiencing personal volition when involving an activity. It is activated when students work at their own pace, for instance, decision-making, dealing with threats and deadlines to reach their goals in a voluntary context. In fact, being autonomous does not mean that students interact under the conditions of the COVID-19 pandemic without considering restrictions. Rather, they adhere to communicating effectively by following the laws set during such difficult times (Bradshaw et al., 2021; Martela et al., 2021). Therefore, autonomy is fostered by motivating students to deal with threats and targets. Based on SDT, this would be achieved by two processes: first, stimulating students' interpersonal and intrapersonal skills while cooperating with their environments. The second process is revitalizing intrinsic motivation using non-controlling rewards, values, and role models. The second basic need is *competence*, which refers to the ability to experience mastery and effectiveness. It is enhanced by gaining proficiency and providing students with feedback after experiencing challenges in voluntary practices. During the pandemic, citizens may feel inadequate due to quarantine and social distancing. Therefore, the demand for new opportunities has influenced students' roles in online activities, workshops, and training courses, which, in turn, has sustained their interaction in prosocial events (Güzel et al., 2020;

Vermote et al., 2022). The third basic need is *relatedness*, which is the need to experience kindness, belonging, and support from surrounding people. It is enhanced by encouraging students to interact with each other to develop both interpersonal and intrapersonal skills. During the pandemic, inaccessibility impacted families and society in different forms. For instance, this inaccessibility caused citizens to be frustrated and feel rejected and stressed. As a result, they created innovative opportunities to connect with others through social media (Lades et al., 2020; Vermote et al., 2022; Vallade et al., 2022).

These three needs have a noticeable impact on individuals from the positive psychology perspective in the development and engagement of the individuals. Positive psychology highlighted the role of BPN in enhancing various aspects of the person such as self-efficacy, passion, continuous effort, and self-esteem and engagement in volunteer work (e.g., Dewaele et al., 2019; Alamer and Almulhim, 2021; Wang et al., 2021; Alamer, 2022a,c; Elahi Shrivani and Alamer, 2022). Consequently, organizations' efforts to plan and design activities should bear in mind volunteers' fulfillment of their three BPN that enable volunteers to gain a sense of effectiveness and mastery, build closeness and connection with significant others, and experience choice and psychological freedom (Zheng et al., 2021).

For instance, Vermote et al. (2022) conducted a study to examine the distinctive roles and interactions of the three psychological needs during the COVID-19 pandemic using cross-sectional and longitudinal designs. The findings asserted that satisfaction of the psychological needs for autonomy, competence, and relatedness is critical in times of insecurity, while need frustration represents a risk factor for instability during such times among different contexts and cultures. Cantarero et al. (2021) conducted two studies to examine whether obstacles to BPN during the COVID-19 pandemic challenge people's mental well-being. The first study design was correlational, and the results revealed that higher levels of satisfaction with BPN were positively associated with higher well-being during the COVID-19 outbreak and that autonomy need satisfaction was negatively affected by the pandemic. The second study was a between-subjects design. The results affirmed that satisfaction with BPN is positively associated with increased mental well-being and decreased perceived stress. Both studies showed that mental well-being during the COVID-19 pandemic is positively increased due to people working as usual and the number of people contacted via phone or internet but not in person.

Martela et al. (2021) presented a summary of theory- and evidence-based principles that are drawn upon meta-analysis of five studies (i.e., Koestner et al., 1984; Savard et al., 2013; Ryan and Deci, 2017; Gillison et al., 2019; Rodríguez-Meirinhos et al., 2020).

Martela et al.'s preliminary list of theoretical principles encompasses the following three basic communicative techniques: first, the autonomy-supportive communication

techniques in which meaningful rationale is provided, treating people as responsible agents with aspirations, goals, and values, and choices on how to adhere to the rules; second, competence-supportive communication techniques in which concrete instruction and expectations are provided, constructive clear, and relevant feedback on how successful people have been in adherence to those measures, and key obstacles for change are addressed; third, relatedness-supportive communication techniques in which people's perspectives, feelings, and potential conflicts are acknowledged, shared identity and common fate is acknowledged, trust is built through transparent and open communication, trusted messengers to mediate the guidelines for various groups are identified, and people show an obvious natural willingness to support each other.

The study of Martela et al. (2021) highlighted three aspects. First, the differences in styles of communicating policy decisions may have a significant role in people's voluntary motivation and behavior change. Second, the effect of governmental guidelines may stimulate autonomy and accordingly, more voluntary and sustainable adherence to necessary guidelines. The third aspect is the integration of elements of social identity theory with SDT. The findings and implications may influence different contexts and pave the way for further studies, refining and developing the scientific grounding of the principles.

In a recent study, Alamer (2022b) investigated the role of the BPN to promote sustained language learning during the COVID-19 pandemic among Saudi students. Using structural equation modeling, the findings of the study found that high levels of the BPN explained Saudi students' ability to continue learning during the pandemic through the mediating role of learning behaviors. Specifically, the results highlighted the role of autonomy in explaining students' decreased levels of *language anxiety* during the pandemic, but increased levels of *seeking new opportunities and using alternative learning options*. Relatedness and competence were associated with declined levels of *worrying about language proficiency* declining during the pandemic. Thus, in the present research, we want to investigate the extent to which the results of the present study replicate the findings of the previous studies (Alamer, 2022b).

Research questions

No study to date has directly attempted to empirically evaluate the associations between the three BPN and sense of national responsibility, searching for opportunities to volunteer, and the quantity of volunteering made among Saudi undergraduate students. Thus, the present study is concerned with answering three research questions:

RQ1: What are the BPN levels of Saudi undergraduate students studying at a Saudi public university during the COVID-19 pandemic?

RQ2: How do the BPN relate to the *sense of national responsibility, the search for opportunities to volunteer and the quantity of volunteering made?*

RQ3: How stable are the results of the path model across the two genders?

Methods

Participants

The study sample consists of 215 Saudi undergraduate students who study at a public Saudi university. Seventy-nine were male, and 136 were female; they were between 18 and 26 years old with a mean age of 20.3 ($SD = 1.25$). The convenience sampling strategy was used. The university approved the study proposal and granted permission for the first author to collect data from the students. An invitation was sent to all students through a channel in the Telegram instant messaging application dedicated to departmental news and announcements. Those who were willing to participate clicked on a link to a Google Forms questionnaire, and those who were not interested were informed to ignore the invitation or refrain from completing the survey if they wanted to withdraw.

Instruments

The basic psychological needs

To measure students' BPN, the scale developed by Ilardi et al. (1993) was adapted. The original scale consists of 12 items that are divided equally across the three factors of autonomy, competence, and relatedness, with each assessed by four items. Due to our study design and COVID-19 restrictions, we used a lower number of items per construct. Students were asked to indicate the extent to which they agree or disagree with each statement on a 7-point Likert-type response format. We slightly adjusted the scale to suit the context of our study. An example item is "I have the choice to select the contribution I want to make to my community." The scale Cronbach's alpha reliability was $\alpha = 0.75$, which indicated an acceptable level of reliability.

Outcome variables

Three items were used in the present study as outcomes. They have been constructed in a way that allows us to learn more about *sense of national responsibility, searching for opportunities to volunteer and the quantity of volunteers made*. The first two items were formulated in a 7-point Likert scale. The first item reads "I feel I take responsibility for my country by volunteering where possible." The second item reads "searching for opportunities to volunteer." The last item was an open-ended question and asked students to indicate by providing numbers only to show how much volunteering they had done thus far.

Statistical analyses

To analyze the data of the present study, (The jamovi project, 2022) software was used. Before analyzing the data, the normality of the data was checked through skewness and kurtosis values, with the $+2/-2$ guidelines. Internal consistency reliability was examined using Cronbach's alpha (α) with 0.70 or above indicating sufficient evidence of this measure (Alamer, 2022c). It is suggested that α values above 0.70 are indicative of good internal reliability. Convergent validity is evaluated using the average variance extracted (AVE). The guideline endorsed for AVE is that values above 0.50 support convergent validity. With regard to the path model, we used the diagonally weighted least squares (DWLS) estimator because the response spectrum to the items was narrow and the assumption of normality of the data was violated. Research suggests that when DWLS is used, the standardized root mean square residual (SRMR) fit index (among the others) can be trusted (Shi and Maydeu-Olivares, 2020), with values below 0.08 and 0.05 indicating acceptable and a good fit to the data (Alamer and Marsh, 2022). Nonetheless, we report all fit indices, such as the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA).

Results

Table 1 and Figure 1 shows the results of the descriptive statistics, including the mean, SD, normality checks, and the correlation among the variables. We applied the non-parametric version of the correlation [i.e., Spearman's (ρ) Correlations] to account for the non-normality observed in the data (see Table 1 for details). To answer RQ1, we can see that participants have relatively medium mean values on autonomy $M = 5.23$, $SD = 1.56$, competence $M = 5.01$, $SD = 1.61$, and relatedness $M = 4.38$, $SD = 1.73$. We report the histograms for a visual reading of the three variables.

Table 1 shows that all variables have positive correlations between the BPN and the outcome variables (the correlation sizes range from 0.25 to 0.46). As such, at the correlation level, the basic needs of autonomy, competence, and relatedness can be said to be positively associated with to levels of volunteering and national responsibility. However, these results are bivariate correlations; thus, they are limited in providing clearer information about the collective effects of the BPN on the outcomes. Accordingly, we examine and report the results of the path analysis in the following sections. Following the guidelines in interpreting the path coefficient in path analysis, Hair and Alamer (2022) suggest that β -values in the ranges of 0–0.1, 0.1–0.3, and 0.3–0.5, and those that are > 0.5 are indicative of weak, modest, moderate, and strong effect sizes, respectively.

To precisely investigate the relationship between the BPN and the variables under levels of volunteering and national responsibility, path analysis was conducted. The results of the

TABLE 1 Descriptive statistics, distribution, and zero-order Spearman’s (ρ) correlations for the variables.

Variable	M	SD	Skewness/Kurtosis	1	2	3	4	5	6
1. Autonomy	5.23	1.56	-0.31/0.02	-					
2. Competence	5.01	1.61	-0.58/0.59	0.53*	-				
3. Relatedness	4.38	1.73	-0.12/-0.92	0.23*	0.32*	-			
4. Sense of national responsibility	5.97	1.31	-1.67/3.03	0.35*	0.37*	0.25*	-		
5. Searching for opportunities to volunteer	5.18	1.61	-0.64/-0.37	0.42*	0.51*	0.28*	0.45*	-	
6. The quantity of volunteers made	1.10	2.65	7.08/30.39	0.31*	0.45*	0.25*	0.40*	0.46*	-

* $p < 0.001$.

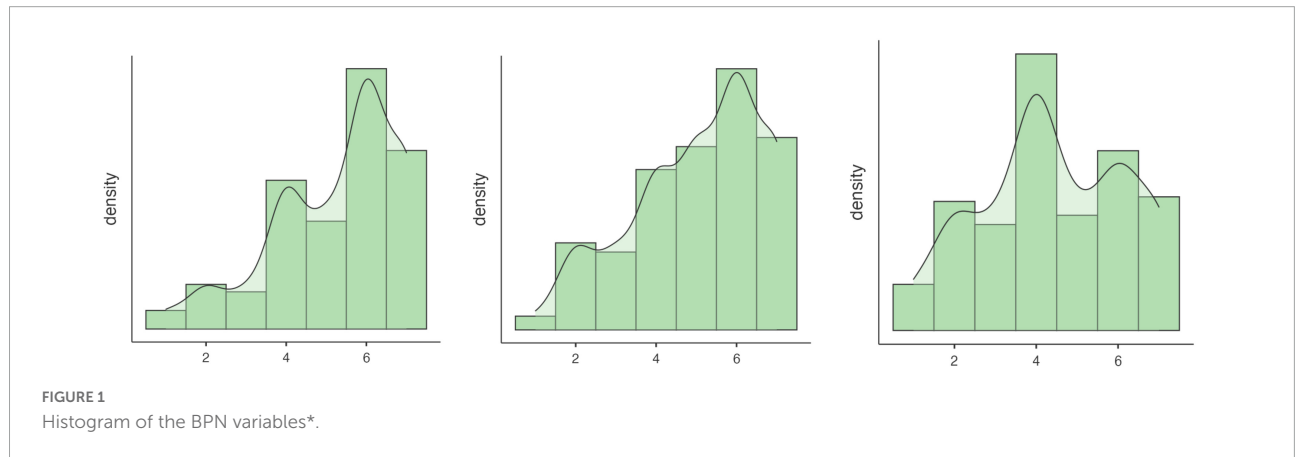


FIGURE 1 Histogram of the BPN variables*.

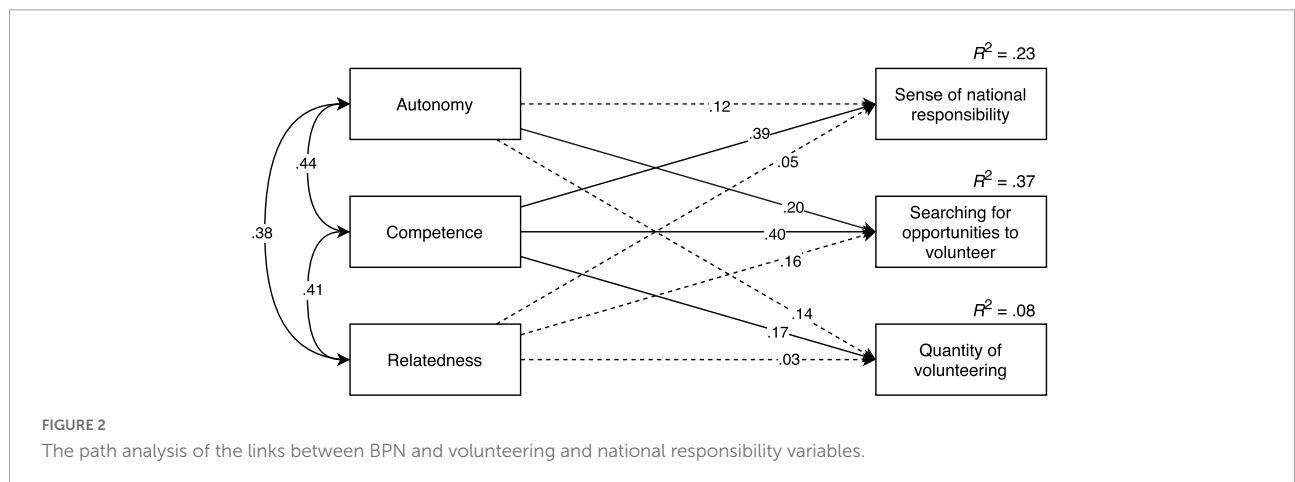


FIGURE 2 The path analysis of the links between BPN and volunteering and national responsibility variables.

path analysis are reported in Figure 2. The model fits the data adequately [$\chi^2 = 5.59$, $df = 3$, $p < 0.001$, SRMR = 0.04, RMSEA = 0.07, RMSEA Low and Hi 95% CI (0.01, 0.15), CFI = 0.99, TLI = 0.95, IFI = 1.00]. The results of the path model illustrated that the correlation between the predictors was within the acceptable levels (Alamer and Marsh, 2022; Shao et al., 2022).

The variance explained by the predictor variables in the outcome variables, i.e., *sense of national responsibility*, *searching for opportunities to volunteer*, and *the quantity of volunteering made*, was 23, 37, and 08%, respectively. Specifically, the path coefficients were significant and non-significant, and we offer explanations for them. First, *sense*

of national responsibility was only predicted by the sense of competence ($\beta = 0.39$, $p < 0.01$), indicating a moderate effect size. Second, *searching for opportunities to volunteering* was predicted by two variables, autonomy ($\beta = 0.20$, $p < 0.01$) and competence ($\beta = 0.40$, $p < 0.01$), showing modest and moderate effect sizes. Last, the path model showed that *the quantity of volunteers* was only predicted by the sense of competence ($\beta = 0.17$, $p < 0.01$), indicating a modest effect size.

Finally, we conduct the invariance test to examine whether the model is stable across males ($N = 72$) and females ($N = 131$). The results of the invariance test show that the two

genders exhibit significant differences ($\Delta\chi^2 = 32.59$, $\Delta df = 12$, $p = 0.001$). We report the paths that show significant differences accordingly (1) competence \rightarrow sense of national responsibility: male = 0.38, $p < 0.05$, female = -0.08 , $p > 0.05$; (2) relatedness \rightarrow sense of national responsibility: male = -0.10 , $p > 0.05$, female = 0.23, $p < 0.05$; (3) autonomy \rightarrow searching for opportunities to volunteer: male = 0.32, $p < 0.05$, female = 0.07, $p > 0.05$; (4) relatedness \rightarrow the quantity of volunteers: male = 0.00, $p > 0.05$, female = 0.27, $p < 0.05$.

Discussion

The purpose of the present study was to investigate the extent to which students' BPN as drawn from SDT (Ryan and Deci, 2000) are associated with Saudi undergraduate students' levels of volunteering and national responsibility during the COVID-19 pandemic. The literature review indicated that there is a need to expand our understanding of the association between the BPN and outcomes variables that are evident in difficult times. Although past research has shown how BPN are associated with wellness, flourishing, and optimal functioning in general (Ryan and Deci, 2000, 2017), the present study sheds new light on the role of BPN in predicting learners' sense of responsibility for their communities during the COVID-19 pandemic. First, our analysis indicated that students' levels of BPN appear to be medium on all BPN variables. These findings are consistent with previous studies on BPN during the COVID-19 pandemic (e.g., Martela et al., 2021; Vermote et al., 2022). Second, we sought to test the relationship between the three BPN and *sense of national responsibility*, *searching for opportunities to volunteer* and *the quantity of volunteers made* through a path model. Our analysis indicated that self-perception of competence was privileged in predicting scores on all the outcomes, while relatedness was found to be weakly associated with the outcomes. Moreover, we found that autonomy has only an effect on *searching for opportunities to volunteering*.

However, the multigroup analysis displayed some changes between the two genders. Among these changes are the effects of relatedness on two outcome variables, *sense of national responsibility* and *the quantity of volunteers*. The effects of relatedness on these two variables were substantial only among female participants. Thus, it appears that satisfaction of relatedness may be more important for women than men in understanding how individuals' function with regard to volunteering and national responsibility, particularly in the context of Saudi students (Alamer, 2022a,b). In addition, the satisfaction of competence seems to be equally important for both genders; however, in predicting *sense of national responsibility*, the effect in the male group was substantial, while trivial in the female group. This might offer information on

the importance of feeling competent in developing a sense of responsibility for the community because, as previous studies suggest (e.g., Bellato, 2020; Clark et al., 2020; Zheng et al., 2021), the fulfillment of basic needs, particularly a sense of competence, might be predictive of healthy behavior and might also lead to increased willingness to participate in sharing, caring, and providing insights for volunteers. In addition, given that gender exhibited significant differences in our model, which, in turn, led to different path parameters in the model.

We suggest that principals, teachers, parents and people in charge of students in the Saudi context and possibly similar socio-educational contexts consider these individual differences when promoting psychological needs communication. In addition, as the Ministry of Human Resources and Social Development launched a work volunteering platform, we suggest that people in charge should consider the fulfillment of the three BPN of autonomy, competence, and relatedness for individuals, particularly undergraduate students, to engage in and participate willingly in volunteering and take national responsibility during difficult times such as the COVID-19 pandemic. We anticipated that satisfying these needs among Saudi students can yield positive outcomes as previous studies (e.g., Bellato, 2020; Clark et al., 2020; Martela et al., 2021; Alamer, 2022b) as well as the present study illustrated.

Limitations and conclusion

Our study is not without limitations. First, the present study utilized a cross-sectional approach based on a convenience sampling method. Our data were collected from one cohort of participants at a single occurrence. However, the COVID-19 pandemic prevented us from employing a more plausible sampling technique. Additionally, our results would be more informative if we followed the participants for another time point, possibly after the restrictions of the pandemic, to understand how students' endorsement of basic needs fluctuates over time. To summarize, our study highlighted the role of BPN in volunteering and national responsibility in difficult times among Saudi students and showed how these relations differ across genders. It is anticipated that future research could benefit from the results of the present study and expand on them by applying different research methods, such as qualitative methods, to gain more insight into the topic.

Data availability statement

The raw data supporting the conclusions of this article can be requested by contacting the first author without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Imam Mohammad Ibn Saudi Islamic University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

AA was responsible for the research design, data collection, and draft writing of this study. HA contributed toward the literature review and the writing process as well as reviewing the manuscript. Both authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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