Journal of Economic Sciences
Volume 1, Issue 1
https://www.jesciences.com

Impact of Women Empowerment on Fertility Preferences in Pakistan

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Timeline
Received: Jan 19, 2022
Revised: May 31, 2022
Accepted: June 6, 2022
Published: Jun 11, 2022

DOI
https://doi.org/10.55603/jes.v1i1.a2

Abstract

Reproduction is an important aspect of a women's life, unfortunately in Pakistan fertility rates are quite high in comparison to other developing countries as well as in comparison to the other South Asian countries. Different studies have suggested that women empowerment can help reduce fertility rates. The present study has attempted to analyze the role of women empowerment along with other socioeconomic indicators on three different dimensions of the fertility behavior i.e. number of children born (current fertility status), ideal number of children and birth intervals (future fertility status. Data of Demographic and Health Survey (PDHS) 2012-13 has been used. The analysis consists of two levels, at level one a descriptive analysis is carried out. As three different aspects of fertility are the count data. Therefore at the next stage models will be estimated by using poison regression technique and Incidence Rate Ratios (IRR) are reported. It has been found that women's being empowered in financial matters, seeking health care and in household decision making are helpful in reducing fertility. Furthermore, participation in job by women, living in urban areas, having secondary or higher education, access to awareness created by the media, married at higher age are also significant factors in reducing fertility. However, women facing incidence of miscarriage or death of a child tends to increase the fertility. Study had found that wealth of the household, education of husband and having sons have very limited role on the fertility behavior.

Keywords: Women Empowerment, Education, Awareness, Fertility

JEL Classification: J16, I26, D83, J13

1. Introduction

During the latter half of the 20th century, world population has increased alarmingly, mainly in the developing countries of Sub Saharan Africa and South Asia (United Nations, 2015). The significance of women's empowerment in demographic transition in developing countries has been recognized by many development agencies. The fertility started to decline in South Asian countries, because of the empowered status of women in households and society (Phan, 2016).

Over the years there is an improvement in the outcomes of maternal health care in Pakistan. The Maternal Mortality Ratio (MMR) was reduced to 276 in 2006-07 (latest available figure) from 533 during the 1990-91. A significant increase in the contraceptive prevalence rate (CPR) is also been recorded. The CPR was only 12% during 1990-91, which doubled after 10 years and in 2001-02 it was 28%. But this growth slowed down in preceding years and the CPR was 35.4 % in 2012-13. Pakistan has also registered a decline in Total Fertility Rate, it was 5.4 average childbirths per woman over her lifetime in 1990-91; this had gradually reduced to 3.8 in 2012-13 (PMDGR 2010 and 2013). However, in comparison to other developing countries of the region like India (2.5), Sri Lanka (2.35), Bangladesh (2.21) and Nepal (2.39) the total fertility rate is very high. Hence in order to develop policies for fertility control, there is dire need that we may analyze the factors that determine fertility in Pakistan.

The United Nations had recognized the importance of gender equality in the efforts of fertility reduction as early as in 1975 (UN 1975). Latter on during the Cairo International Conference on Population and Development 1994, it was asserted that: "Improving the status of women also enhances their decision-

making capacity at all levels in all spheres of life, especially in the area of sexuality and reproduction" (UN 1994: 25).

McDonald (2000) is of the view that women's empowerment in decision making alone can reduce the fertility without any major change in other spectrum of a women's lives. Because extent to which women get equal rights has very significant impact on the couple's choice of family size and utilization of family planning methods. In this regards women economic empowerment become even more important, lacking economic resources results in minimizing the women's power within family, it make it easy for the husband to impose his decisions regarding family size on the wife (Folbre, 2002). In brief, women empowerment has strong relationship with couples' behavior and intentions regarding reproduction and family planning, which is extremely helpful in reducing fertility rates (Hindin 2000; Mason and Smith 2000).

Practically no society had given the women equal status with men inclusively. Mostly, women have limited economic opportunities and numerous restrictions are imposed in their participation in social activities. Even within the household, the status of the women is determined by her relationship with husband or other household members. Most of Pakistani women had a subordinate position in different aspects, mostly they are lacking in access to economic resources, technology, knowledge and they are mostly restricted to their homes (Jejeebhoy and Sathar 2001; Sathar and Casterline 1998). In these circumstances, it is extremely hard for women to take independent fertility related decisions like number of children, use of contraceptives and utilization of maternal healthcare facilities.

Despite the significance of women empowerment in reducing fertility very little research has been carried out in the context of Pakistan. The present study is an attempt to fill the existing gap in literature by analyzing the role of women empowerment and other socio economic factors in determining fertility preferences in Pakistan. The results of the study will help policymakers in making effective population control policies.

2. Literature Review

Numerous studies have been conducted on the relationship between women empowerment and fertility, the present section provide a brief overview of the latest available studies.

Khan and Raeside, (1997), Bhattacharya (1998, 2006), Hindin (2000) and Kabir et al. (2005a, 2005b) comes to the conclusion that women's empowerment negatively and significantly affects the number of children. However, according to Adak & Bharati, (2011) and Yabiku et al.,(2010) there is no significant relationship exists between women's empowerment and number of children. Abadian (1996) found that education and age at marriage of the women have a negative impact on the total fertility rates. However, study finds that there exists no significant impact of spousal age difference on fertility rate. Sathar and Jejeebhoy (2001) concluded that education, employment status and age at the time of marriage plays significant role in defining the women's status in Pakistan, they also come to the conclusion that these factors also have significant impact on the fertility.

Studies also demonstrated that empowerment has a positive role in fertility preferences like desire for more children. Empowerment by creating more spousal communication regarding fertility related issues gives women more authority and it leads towards less desire for the children. In this regard Gwako, (1997) and Mason and Smith (2000) found empowerment increases the likelihood of women's making fertility related decisions. Hogan et al., (1999), Woldemicael (2009) and Upadhyay and Karasek (2012) found a negative relationship between empowerment of women and the couple's desire for more children.

However, Steele et. al. (1998) found that women's empowerment in the household's purchasing decisions has a negative impact on the desire for more children; however, study is unable to find any relationship between women's empowerment in the mobility and desire for the children. However, Moursund and Kravdal (2003) comes to the conclusion that in India; women living with greater mobility are having more desire of the children. Kritz et al. (2000) found that in case of Nigeria, in areas with comparatively low gender equity, education, labor force participation, women's autonomy, financial contribution in the household income have a negative impact on the desire for more children. However, in areas with more gender equality, women autonomy does not have significant impact on desire for

more children. Hence, along with the women empowerment the socio economic context of the area are extremely crucial in determining the desire for the children.

Zafar (1996), El- Zeini (2008), McAllister et al. (2012) and Upadhyay and Karasek (2012) comes to the conclusion that women's empowerment have a positive and significant impact on the preference of a small family size. According to Woldemicael (2009) households where husband is the authority in household purchasing decisions are likely to desire for the five or more children in comparison to the households wherein women have some say. However, households where husband is the authority in deciding wife's visit to family or friends are less likely to desire large families in comparison to the households wherein women can visits independently. Furthermore, households where wife-beating is considered as justified are more likely to have large families in comparison to the ones that consider wife-beating unjustified.

Odedina, (2016) found that women experiencing domestic violence are less likely to have large family. Similarly, Stieglitz et al. (2018) also found that violence have a significant impact on average number of children. However domestic violence results in many other critical aspects of fertility i.e. miscarriages, abortion etc (Titilayo & Palamuleni, 2015).

According to Hogan et al. (1999) in Ethiopia, higher education, age at time of marriage and empowerment in decision making increase the chances of women to discuss the preference for the optimal family size with their husbands. Similarly, Hindin (2000) found that in Zimbabwe women with no empowerment in household purchases are unlikely to have discussions related to size of the family with their husbands.

Women autonomy in decision making also lengthens the birth intervals, however, in some aspects it results in shortening of birth intervals. Al Riyami and Afifi (2003a, 2003b), Nath et al., (1999) comes to the conclusion that women empowerment in the household results in increasing the birth intervals. Saleem & Bobak (2005) found that in Pakistan, women's autonomy has significant impact on the usage of contraceptives. However, Upadhyay and Hindin (2005) and Fricke and Teachman, (1993) finds that first birth at older ages results in shorter birth intervals because these couples try to catch up with others similarly, women's paid job also shortened the birth intervals. Feldman et al. (2009) concluded that in Mexico the conditional cash-transfer program results in increasing the women's autonomy. However it has no significant impact on the birth intervals. Due to the conditional cash-transfer program, men had reduced the migration for work and they remained at home, that resulted in increased fertility. Drioui,& Bakass (2021) also found that in Morocco, women's empowerment helped in reducing the women's choice for ideal number of children by increasing their bargaining power and appropriate communication with spouse and independence from social norms.

Manzoor (1993) finds that, women's autonomy results in enhanced discussion on the optimal size of family in the couples. However, the study finds that women autonomy has insignificant impact on discussion on family size in the women with limited or medium level autonomy. The women with high level of autonomy can take independent decisions about the family size and hence women autonomy helps in reduction in fertility. Ali et al (1995) finds that women empowerment do not have any significant impact on the number of children. The authors are of the view that most of women in Pakistan do not plan their families and prefer to have more children because of the socio-cultural influences. Ali and Fernando (2010) found that women with empowerment in household financial decision making and mobility, living in urban areas and having exposure to media have significant role in increasing the status of women and it will also results in reduction in fertility rate of women through better access and utilization of contraceptives.

3. Methodology

The present study has used the data of Pakistan Demographic and Health Survey (PDHS) 2012-13. It is nationally representative survey and provides information related to various health aspects. In PDHS 2012-13 a total of 12,943 households were selected. In these households, 13,558 ever married women of age 15-49 were interviewed. An overview of the variables used in the present study is as under:

In order to measure the fertility, literature has suggested that number of children born, preferred waiting time for another child (Birth Interval) and Ideal number of children are the major dependent variables. Hence in present study we used three dependent variables for three different models.

Dependent Variables:

i. **Number of children born**

It is an indicator to gauge the existing situation of fertility, variable can take any value. In the present study the variables range from 1 to 19.

ii. **Birth Interval**

This measures the preferred waiting time for the birth of another child. In the present study it can take any value. In the present study it took value from 0 to 6 where 0 represent if birth interval is less than 12 months and 6 if birth interval is more than 6 years.

iii. **Ideal number of children**

It illustrates the women's fertility preferences and future level of fertility. In the present study this variable had took values from 0 to 27.

Independent Variables:

i. **Urbanization**

A binary variable has been constructed for the locality of the household, it take value of 0 for urban areas and 1 for rural areas. It is expected that living in urban areas had a negative impact on the fertility in Pakistan.

ii. **Level of education of women and her husband**

The education is divided into three categories i.e. no education, primary education and secondary or higher education. Similarly, another variable the education of husband is also created. We expect that more educated women couple like to have fewer children and prefer small families.

iii. **Wealth of household**

The wealth index can take value from 1-5 where 1 indicate poorest and 5 for the richest household. The effect is hard to predict because there are two opposite impacts of wealth on fertility. At one hand due to affordability more wealthy people can afford more children on the other hand poor are least interested in family planning and consider more children as a way out of poverty.

iv. **Awareness about family planning**

In the original data set, there exist three questions related to awareness about family planning. Heard family planning on radio, watched any TV program or advertisement regarding family planning and read about family planning in newspapers. A binary variable named as awareness about family planning has been constructed by using the available information. It is binary variable where 0 represent that responded had not heard, watched or read about family planning in any form of media. We expect that awareness has a positive impact on reducing the fertility and promotion of birth control policies.

v. **Relationship with the household head**

In the data we have considered the relationship to household head as a binary variable. It takes values of 1 if the household head is she herself or her husband and takes value of 0 for all other relationships.

vi. **Age at Marriage**

The women who got married at early age are more likely to have high fertility rates as compared to women married at higher ages.

vii. **Desire of children by husband**

Mostly in Pakistan it is hypothesized that husbands desires for more children that results in increasing the fertility. This is a binary variable where 0 represent that husband do have desire for more children and 1 represent that husband like to have more children.

viii. **Women Empowerment**

There exists questions related to four areas of empowerment i.e. 1) empowerment in healthcare, 2) empowerment in household purchases, 3) empowerment in visiting relatives/friends and 4) empowerment in utilization of husband earning respectively. In order to simplify the analysis we clubbed the responses into three broader categories i.e. i) respondent alone ii) Jointly iii) husband/someone else.

ix. **Nature of Employment**

Our employment variables has three options i.e. 1) not working 2) employed for cash and 3) employed not for cash.

x. Experience of loss of a child

It measure whether a women had experienced a miscarriage or death of a child. We constructed two separate variable one for women experiencing miscarriage and second women experiencing death of a child. These are binary variable where 0 represent no miscarriage/death of a child and 1 represent experienced miscarriage /death of a child

xi. Have Sons

It is also hypothesized that more children were born for the desire of male baby. And birth of son results in limiting the desire of more children to some extent. This is a binary variable where 0 represent that women have no son and 1 represent that women gave birth of a son.

The analysis consists of two levels, at level one a descriptive analysis is carried out. As three different aspects of fertility i.e.1) number of children born 2) Ideal number of children and 3) birth interval are the count data. Therefore at the next stage models will be estimated by using poison regression technique.

4. Results

4.1 Descriptive analysis

The table 1 provides the overall descriptive position of the selected indicators.

Table 1 Descriptive Analysis

Background Characteristics	Proportion of the women (%)	Background Characteristics	Proportion of the women (%)
Birth Interval		**Employment**	
<12 Months	41.91	Not Employed	79.86
1 Year	10.54	Employed not for cash	16.29
2 Years	21.81	Employed for cash	3.85
3 Years	14.33	**Husband Desire for More Children**	
4 Years	5.22	Do not want more	59.37
5 Years	5.11	Wants more	40.63
6+ Years	1.07	**Have sons?**	
Education		No	24.74
No Education	56.24	Yes	75.53
Primary	13.50	**Relationship with Household Head**	
Secondary or Higher	30.26	Self /Husband	61.34
Education of the Husband		Others	38.66
No Education	31.44	**Empowerment in healthcare**	
Primary	13.42	Respondent Alone	10.48
Secondary or Higher	55.15	Jointly	37.51
Wealth		Partner/Someone else	52.01
Poorest	18.34	**Empowerment in household purchases**	
Poorer	19.07	Respondent Alone	7.03
Middle	19.10	Jointly	36.00
Richer	19.60	Partner/Someone else	56.97
Richest	23.90	**Empowerment in visiting relatives/friends**	
Region		Respondent Alone	8.89
Urban	46.84	Jointly	38.11
Rural	53.16	Partner/Someone else	53.01
Incidence of Miscarriage		**Empowerment in utilization of husband earning**	

No	66.40	Respondent Alone	6.59
Yes	33.60	Jointly	33.62
Incidence of Death of a Child		Partner/Someone else	59.80
No	76.25	**Awareness about family Planning**	
Yes	23.75	Never Heard of family planning on radio, TV, or Newspaper	67.57
****		Heard family planning on radio, TV, or Newspaper	32.43

The table 1 suggests that majority of women prefer to have birth interval of less than 12 months i.e. 41 % while only 25% of women like to have birth interval of more than 2 years. Most of the women are having no education (56%). However, situation in education of spouses is relatively satisfactory as 55% are having education of secondary or higher wherein 31% of the husbands have no formal education. In the survey, 53% of the respondent womenn belongs to urban areas. The majority of the women are not formally working (80%), and only 4% of the women are working for monetary benefits.

It has also been revealed that among women, there is very limited awareness family planning because only 32% of women had heard about family planning through media. Furthermore, 76% of the women had sons. Only 34 % of women had faced the incidence of miscarriage and only 24% of women had faced the incidence of death of a child. It has also been observed that majority of women i.e. 61% are either herself household head or household is headed by their husbands.

As far as empowerment indicators are concerned it is evident that only 7-10 % of women are sole decision-makers in four different aspect of empowerment (i.e. empowerment in healthcare, household purchases, visiting relatives/friends and in utilization of husband earning). However, around 33-38% of women are involved in decision making as jointly decision-maker, while in around 52-59% of the households decisions are made solely by partner or someone else without the involvement of the women.

4.2 Estimation Results

The results of three models estimated by using the poison regression are summarized in table 2.

Table 2 Estimation results of models analyzing the determinants of fertility of Pakistani women (values are Incidence Rate Ratios)

Name of the Variables	Children Born	Ideal Number of Children	Birth Interval
Urbanization			
Urban	1	1	1
Rural	1.04*	1.01**	0.86*
Education			
No Education	1	1	1
Primary	0.87*	0.76*	1.21*
Secondary or Higher	0.77*	0.72*	1.30*
Wealth of the Household			
Poorest	1	1	1
Poorer	1.02*	0.98	1.02
Middle	1.05*	1.03	0.97
Richer	1.04*	1.06	0.93
Richest	1.06*	1.04	0.89
Awareness			
Never Heard family planning on radio, TV, Newspaper	1	1	1
Heard family planning on radio, TV, Newspaper	0.99	0.94*	1.18*
Relationship with Household head			
Self or Husband	1	1	1

Others	0.71*	0.89*	1.17*
Age at marriage	0.97*	0.97**	1.06*
Husband's Desire of more children			
No	1	1	1
Yes	1.06*	1.29*	0.90*
Education of the Husband			
No Education	1	1	1
Primary	0.95**	1.01	1.04
Secondary or Higher	0.96*	1.00	1.06
Empowerment in Seeking Healthcare			
Respondent alone	1	1	1
Jointly	0.96**	0.89**	1.07**
Partner/ Someone else	0.98*	1.14*	1.07
Empowerment in Household purchases			
Respondent alone	1	1	1
Jointly	0.97	0.98	1.02*
Partner/ Someone else	0.96	1.09*	0.96*
Empowerment in utilization of husband earning			
Respondent alone	1	1	1
Jointly	1.02	0.90*	1.19*
Partner/ Someone else	1.01**	1.02**	0.96*
Empowerment to visit relatives/friends			
Respondent alone	1	1	1
Jointly	1.01	0.99	1.03
Partner/ Someone else	1.00	0.97	0.99
Employment			
Not Employed	1	1	1
Employed not for cash	0.99	0.93*	0.82*
Employed for cash	0.94*	0.97	0.82*
Incidence of Miscarriage			
No	1	1	1
Yes	1.07*	0.98	0.89*
Incidence of Death of a Child			
No	1	1	1
Yes	1.54*	1.11*	0.91*
Have Sons			
No	1	1	1
Yes	1.11	0.98	1.69*
Constant	2.23	5.41	0.98
***p < 0.05; **p < 0.10**			

The results indicate that urbanization is having significant impact on fertility behaviors as women living in rural areas are having higher incidence ratio for the number of children born and ideal family size. However, women living in rural areas having less incidence ratio for birth interval. It reflects that in comparison to rural women, urban women are higher birth intervals but less number of children and they prefer to small family size.

It was also evident from the results that women education has significant impacts on her fertility behavior. Women with secondary or higher education are having less incidence ratio for more children/ ideal number of children in comparison to women with no education. Similarly, women with higher education are having significantly higher incidence ratio for birth interval. It reflects that education has significant impact on lowering the women fertility rates. However as far her husband's education is concerned it has been found that except for the number of children (wherein educated husbands are having significantly less incidence ratio of having more children) in all other dimensions (ideal number of children or decision regarding birth intervals), husband's education do not have significant impact.

Wealth of the household has significant impact for the number of children born. It has been found that wealthier household are having higher incidence ratio for higher number of children in comparison to poor. Similarly, richest households (Top 20%) are having less incidence ratio of birth interval. However, for other distribution of the wealth the impact is insignificant.

It has also been found that awareness created by media is having significant impact on the ideal number of children and birth intervals. Women who got awareness from media about family planning are having less incidence ratios for the larger ideal family and are having higher incidence ratios for the birth interval.

Age at marriage is also having significant impact on the number of children, ideal number of children (smaller incidence ratio i.e. less than 1) suggesting that women married at higher age are less likely to have more children. While age at marriage is having higher incidence ratio for the birth interval indicating that women married at higher age are more likely to have higher birth interval.

In line with expectations husband desire for the more children increases the birth of more children and ideal number of children (having significantly higher incidence ratio) while it tends to reduce the birth interval (having significantly smaller incidence ratio).

Similarly if women had suffered from the incidence of a miscarriage or death of a child then it has significantly higher ratios of number of children born and ideal number of children. However, in case of birth interval it has significantly smaller ratios. It suggests that death of a child or miscarriage tends to increase the chances of higher fertility.

Having son does not have any significant impact on number of children born or ideal number of children. However, having sons result in increasing the incidence ratio of birth interval. It reflects the common psyche of Pakistani women that after giving birth to sons they start thinking of birth control.

As far as indicators of women empowerment are concerned it has been found that except for the empowerment to visit friends and relatives, all other dimensions of empowerment have significant impacts on the number of children born, ideal number of children and birth intervals. It has been found that households, where women are not involved in decisions regarding seeking health care, have significantly higher incidence ratios for number of children born, ideal number of children, however, in case of birth interval the impact is insignificant. It has also been found that in the households where husband/ someone else are the sole decision makers for the household purchase have significantly higher incidence ratio for the ideal number of children and significantly less incidence ratio for the birth interval. Similarly households where husband/someone else are the sole decision maker for utilization of family earnings there are more higher incidence ratio for number of children born and ideal number of children, while having less birth intervals. It can be summarized that more empowered women in terms of finance, household decision making and seeking health care tends to have smaller family size and high birth intervals. Furthermore employed women (either for cash or not for cash) have significantly less incidence ratio for children born and ideal number of children in comparison to the unemployed women and higher incidence ratio for the birth interval.

5. Results and discussion

Reproduction is very important aspect of a women's life. In most of the societies childbearing plays pivotal role and women's status is linked with the number of children. Studies have suggested that women's autonomy in decision making has strong relationship with the couples' behavior and intentions regarding reproduction and family planning, which is extremely helpful in reducing the fertility rates. However, in Pakistan very limited research has been conducted to analyze the role of women empowerment on the fertility behavior. The present study has attempted to analyze the role of women empowerment along with different other socioeconomic indicators in fertility behavior in Pakistan.

The major finding of the study is that the three dimensions of women empowerment i.e. financial empowerment (proxied by utilization of husbands earnings), empowerment in seeking health care and empowerment in household decision making (proxied by decision making in household purchase) have significant impacts on the fertility indicators. However, social empowerment (proxied by decision making to visit family members/relatives) does not have significant impact on fertility indicators. The results suggest that women empowerment is helpful in reducing the fertility because more empowered

women have fewer children born an indicator of current fertility and tends to have smaller family as ideal, indicator of future fertility preferences and higher birth intervals also an indicator of future fertility preferences. Furthermore, participation in job by women is also helpful in increasing the birth interval and reducing the number of children born and ideal family size. In view of that there is dire need that to achieve the target of reduction in fertility the government must take necessary steps to empower the women. In this regard provision of more job opportunities will not only result in increasing the status of women but it will also helpful in controlling the fertility rates in Pakistan.

Study also found that urbanization is helpful in reducing the number of children born and ideal family size and increasing the birth interval. However, this finding must not be considered as promotion of migration to cities rather it is suggested that better health, education, transportation facilities be provided in the rural areas so that rural areas may come closer to urban areas in terms of health and education and level of awareness that will ultimately reduce the fertility in rural areas.

The education of women emerges as an important factor in determining the fertility of women as women having secondary or higher education tends to have smaller families and larger birth intervals. However, the education of husband does not have significant impact on the birth interval as well as family size. It reflects the importance of girls' education in Pakistan. As provision of education to women will not only improve their status in the society and minimizes the gender inequality but it will also results in achieving other development goals.

Similar to education awareness created by the media is also having significant impacts on the ideal family size and birth intervals. Women that are able to get awareness about family planning from media tends to have smaller family sizes and higher birth intervals. So there is need that more family planning programs may be telecasted on the TV, Radio and Print media.

It has been found that wealth of household is having limited impact on the fertility behavior. The results indicate that wealthier household tends to have slightly higher number of children. However, in other aspects i.e. ideal family size and birth interval wealth of household do not have significant impact.

Study also found that women married at higher age are less likely to have more children while having higher birth intervals. It indicates that marriages at early age must be discouraged. In this regards legislative action and awareness among masses will be helpful.

The study also comes to the conclusion that women facing incidence of miscarriage or death of a child tends to have larger family sizes and smaller birth intervals. It reveals the need of provision of better maternal health care facilities to the women and child health care facilities. Contrary to the expectation having sons do not have any significant impact on the family size although it significantly increases the birth interval. It suggests that women tend to have smaller birth intervals as long as it had not given birth of a son however, after the birth of son the women prefer to have larger birth intervals.

Acknowledgments

The authors acknowledge the useful comments from the Editor and anonymous reviewers. Certainly, all remaining errors are our own.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Disclosure statement

The views presented in the paper are the author's own and do not reflect the views of his affiliated institution in any respect.

Funding if any

Nil

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