Review Article

Gender-Based Violence and its Effect on Mother, Fetus and Newborn Baby: A Systematic Review

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Abstract: Gender-based violence (GBV) is a major public health concern resulting in physical, psychological, sexual, and social issues. GBV during pregnancy may results in complicated and grave consequences for mother and unborn child. The prevalamce of GBV was reportedly higher in developing countries, indicating higher maternal and child mortalities. Effect of GBV on pregnancy has been reported to enhance the chances of prolonged labor, obstructed labor and in severe injuries higher incidents of miscarriages and abortions are also been reported. Moreover, fetal respiratory distress, diarrhea, small for gestaional age and Intra Uterine Growth Retardation (IUGR) have also been reported. This review aims to present a systematic view of genderbased violence and its association with adverse pregnancy outcomes and to contribute by filling the existing information gap. Review assessed the effect of GBV during pregnancy on fetal health, reporting infant diarrhea more frequently, along with fever, vomiting, and respiratory distress. The significant association between adverse maternal and fetal outcomes and gender-based violence has been evaluated extensively.

Keywords: Gender-Based violence, Pregnancy outcome, Neonatal health, Fetal respiratory distress, Contraception, Abortions.

INTRODUCTION

The United Nations (UN) defines gender-based violence (GBV) as "any physical, sexual, psychological, cultural, spiritual, social, emotional, or economic violence perpetrated by an intimate partner, family member, or any other person as a result of gender identity or gender expression." [1,2]. Another UN resolution defined GBV as "any action or behaviour that causes physical or emotional harm to women, including threats of arbitrary deprivation of liberty" [3].

The global prevalence of GBV or intimate partner violence (IPV) is significantly high ranging from 20% to 75% of emotional abuse, 13% - 61% of physical violence, and 6% - 59% of sexual violence as reported by females who have experienced GBV at least once in their lifetime [4,5]. Many studies reported risk factors of GBV, including socio-economic status (e.g., the incidences are higher in lower-income countries compared with high-income countries) [6]. The difference of authority within the family and the prominence of the male member as breadwinner is a major contributing reasons for GBV or IPV in lower-income households [7,8]. Another factor of GBV is unintended pregnancies causing frustration among partners, a study from Peru indicated 65% of pregnancies as unintended reported physical or sexual violence during pregnancy, unavailability, and hesitancy of asking for contraception [9]. Furthermore, studies indicated that GBV during pregnancy has been reported persistently in developing, lower-income countries and the prevalence ranges from 6% - 29%. While developed countries had a slightly lower prevalence of GBV during pregnancy indicating 1% to 20%. The slight difference between the prevalence rate negates the financial and educational factors as the only risk factors for GBV [8,10].

Research shows that children of women chronically exposed to IPV demonstrate a higher risk for behavioral, emotional, social, and cognitive difficulties [11]. Recent evidence shows that mothers' lifetime exposure to distressful experiences induces phenotypes, which can be inherited in a DNA-independent manner (e.g., changes in DNA methylation or small RNA expression in germ cells. [12]. Briefly, chronic psychological distress caused by psychosocial stressors increases the secretion of placental Corticotropin-Releasing Hormone (CRH), which facilitates gene-environment interactions that trigger highly prevalent mutations in the gene for methylenetetrahydrofolate reductase (MTHFR) [13]. The situation may be complicated by the associated behavior changes such as increased vulnerability to sexual alterations and cigarette smoking or cocaine use, as well as susceptibility to bacterial vaginosis, chorioamnionitis, and decidual vasculopathy [14,15].

Studies have revealed that violence during pregnancy causes difficulties in pregnancy and delivery, and increases the chances

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of post-natal depression, however, GBV tends to increase the risk for children to encounter interactive, emotional, and intellectual complications [16-20]. Follow-up study of children born to victims of GBV were slow learners, had difficulty in achieving milestones, avoided social gatherings, and interactions, and was less attentive towards learning [21].

The reported prevalence and severity of gender-based violence indicate a great need for the evidence-based generation to appropriately respond to the problem to manage and prevent the problem. Sufficient literature is available on the problem, however, gender-based violence still stands as a primary reason for women's health deprivation during and after pregnancy causing the adverse birth outcome. Initialization of local action plans to prevent gender-based violence was included in sustainable developmental goals for Pakistan in 2020, to establish an action plan association of GBV and adverse pregnancy outcomes is a necessity. This review aims to present a systematic view of genderbased violence and its association with adverse pregnancy outcomes and to contribute by filling the existing information gap.

METHODOLOGY

Study Design and Setting

This study was a systematic review of evidence conducted from the last 20 years' original research articles, starting from 2002 till 2022. We selected the observational studies with the objectives of evaluating the association between gender-based violence, intimate partner violence, or violence against women during pregnancy with adverse pregnancy and fetal outcomes. There was no geographical limitation for this review, all studies conducted and published within mentioned period were searched. The study followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guidelines (Fig. **1**).

Data Sources

This systematic search was carried out utilising keywords in online resources such as Google Scholar, PubMed, Scopus, and Science Direct. All relevant articles and reports in English were saved and evaluated. In each of the aforementioned databases, our search method contained various keyword combinations in the following order:

- "Gender-based violence" OR "Intimate partner violence" OR "Violence against women [Title/Abstract].
- "Outcomes of violence" OR "Violence outcomes" OR "Adverse outcomes of GBV" [Title/Abstract].
- "Association between GBV and pregnancy outcomes" OR "Effect of IPV on pregnancy outcomes" [Title/Abstract].
- [A] AND [B] AND [C].

Study Selection

The investigator retrieved the most relevant studies based on titles and abstracts. The whole articles were evaluated, and the most relevant papers were chosen based on the review's eligibility criteria. Two study investigators retrieved relevant studies based on titles and abstracts. The full contents of the recovered papers were reviewed, and the papers that met the eligibility requirements were chosen. The pertinent information was retrieved and organised in a table. The final report includes peer-reviewed original publications published in English that matched the eligibility requirements.

Included studies were selected from search engines according to the study design, patient selection method, and outcome assessment evaluation. Two out of sixteen studies were designed as case-control studies, in these studies, two groups were observed, one with a proven history of GBV incidents reported during present pregnancy while the control group females were never exposed to any kind of GBV previously. As case-control studies are excellent in comparing the outcome followed by exposure, these studies were added. Similarly, two studies had cohort study designs, while the remaining 12 studies had a cross-sectional survey-based methodology, data collected via validated, pre-structured questionnaires in a private setting. After used questionnaires/scales were the maternity experience survey (MES) scales Psychological violence questionnaire (Cronbach's alpha 91%), the Norvold Abuse Questionnaire (Nor AQ), the Sense of Coherence Scale (SOC-13), Edinburg postnatal depression Scale (EPDS), Alcohol use disorders identification test (AUDIT), women abuse Screening tool (WAST), women's health domestic violence against women scale developed by WHO, Index of Spouse Abuse (ISA) were used along with a few relevant question related to domestic abuse type, frequency, effects, realization to impact.

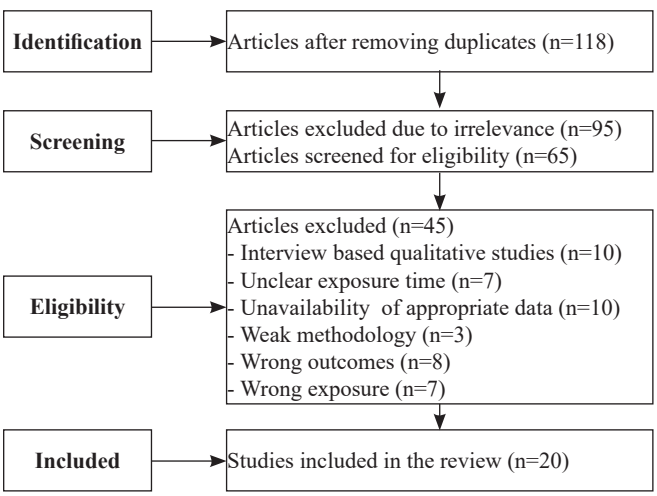

Fig. (1). Prisma Flow Chart.

RESULT

Selected 20 studies were extensively evaluated to assess all relevant information related to GBV effects on the pregnant female and on fetus. Complications reported during pregnancy, delivery, and unborn child were also evaluated. The long-term effects on a child born to mothers suffered from IPV for their intellectual, physical, emotional and psychological health were also reported by studies.

Prevalence of GBV

Studies were included from many different regions, and continents of countries, and results indicated a higher prevalence of GBV or IPV in south Asia at 53.3% in Pakistan followed by 35.2% in India and 39% in Bangladesh. African countries Ethiopia indicated 26.9%, Nigeria 15.1%, Zimbabwe 37.5%, and Peru reported 35.2%, 13.4%, 8.2%, 3.3%, 2.5%, and 1.8% of prevalence respectively (Fig. **2**).

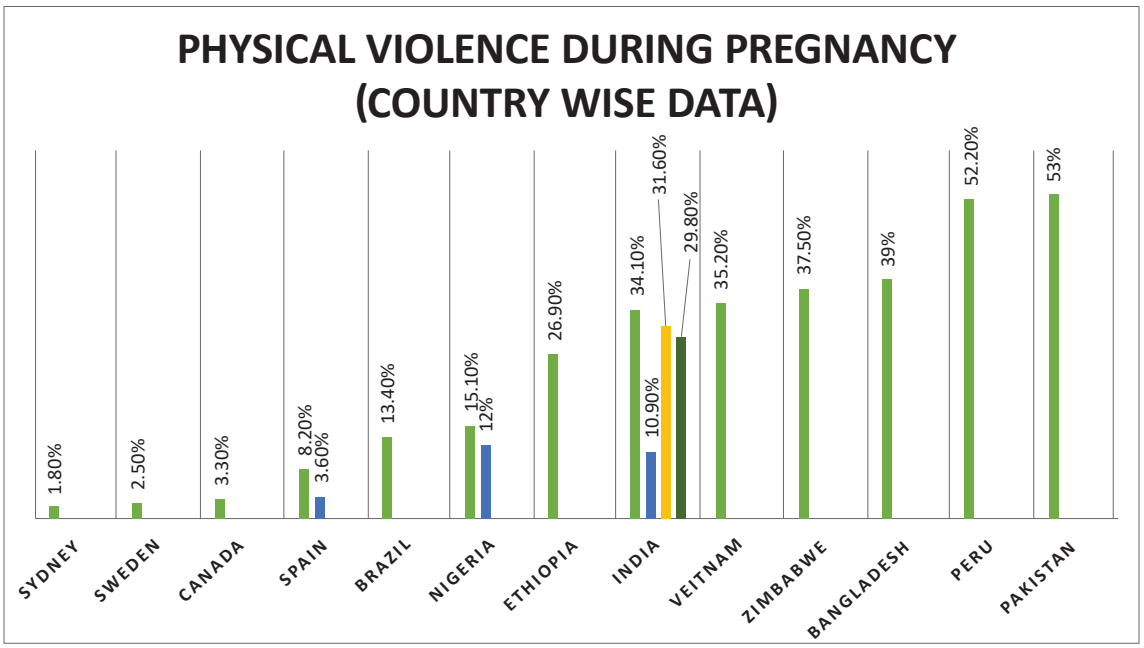

Fig. (2). Prevalence of Gender Based Violence or Intimate Partner Violence – Country Wise Data.

Psychological or emotional abuse prevalence was reported as 69.9% in Iran, followed by Peru at 35.7%, Brazil at 24.7%, and Nigeria at 18%. In our medical studies, the least frequency was reported in India with 14% (Fig. **3**).

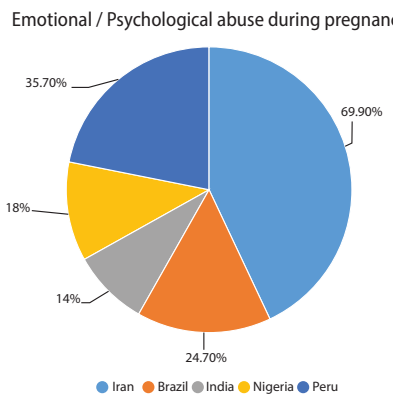

Fig. (3). Emotional/Psychological Violence reported by GBV Victims from Included Studies.

Complications of GBV on Maternal Health

Effects of GBV during pregnancy on maternal health were divided into physical effects and psychological effects identified after clinical diagnosis of relevant issues/disorder which was not present before the GBV/IBV incident.

Physical Issues

A total of 281543 participants were evaluated from 16 studies, 27% of respondents reported allergies, 9.5% had hypertension diagnosis, 8% developed gestational diabetes mellitus, and 39.3% reported anemia during pregnancy. As mentioned above the most commonly reported physical problem was anemia followed by urinary tract infections in 25.3%, vaginal infection in 16.3%, and sexually transmitted infections in 4.3%.

Psychological Issues

All participants were assessed for any psychological or emotional issues, during pregnancy and were distressed after the GBV incident reported by 51.4%, while 6.7% reported insomnia, and post-partum depression was documented as 15.8% (Table **1**).

Table 1. Selected Studies, Tools and Results.

S.#	Tool / Instruments	Results
1	A pre-tested questionnaire was used to assess the data [22].	80% indicated extreme distress after the violence, 87.8% indicated health compromise.
2	Psychological violence questionnaire (Cronbach's alpha 91%) along with socio-demographic details [23].	Placental abruption was reported but statistically, significance was not present.
3	National Survey [24].	18% stillbirths in physically abused mothers, and 18% in emotionally abused.
4	NorVold Abuse Questionnaire (NorAQ), Sense of coherence scale (SOC-13), Edinburgh Postnatal Depression Scale (EPDS), Alcohol Use Disorders Identification Test (AUDIT) [25].	6.7% lack of sleep, 2.2% miscarriage/abortion, 1.9% overweight.
5	Woman Abuse Screening Tool (WAST), validated for gender-based violence screening [26].	4 ± 5 days of hospitalization in abused mothers.
6	Physical and sexual intimate partner violence scales were used along with a demographic questionnaire [27].	9.5% HTN, 8.8% DM, 21.5% allergy, 27% urination problem, 12.5% prolonged labor, 5.3% Obstructed labor, 5.5% breech presentation, 18.5% postpartum hemorrhage, 6.3% premature rupture of membrane.
7	WHO conducted a Multi-Country Study on Women's Health and Domestic Violence against Women [28].	Higher incident rate of miscarriages and still birth with lifetime abuse.
8	Index of spouse abuse (ISA) Physical and non-physical abuse [29].	39.3% anemia, 25.3% UTI, 16% Vaginal infection, 8% GDM.
9	The pre-structured questionnaire, validated abuse assessment screen questionnaire, routine domestic violence screening test [30].	Positive association of IPV with postnatal depressive symptoms (OR = 2.53, 95% CI: 1.76–3.63, P < 0.001).
10	The pre-structured questionnaire was used with demographic details and IPV exposure in the past 5 years of duration in pregnancy [31].	61% of physically abused and 53% of sexually abused females experienced abortion, similarly, 2.8% and 4.37% experienced STIs in the physical and sexually abused category.

Adverse pregnancy outcomes: Prolonged hospital stay and labor were reported in females suffering from GBV, 12.5% of mothers had longer labor, 5.3% had obstructed labor, and 5.5% reported breech presentation. Post-partum hemorrhage was reported in 18.5%, and 6.3% had premature rupture of the membrane. Miscarriage frequency was significantly higher in females who experienced GBV during pregnancy with a 61% risk of miscarriage after physical abuse. 53% risk after sexual abuse while another study indicated high adds of miscarriage or stillbirth in their lifetime after GBV 11PV, 6.6% preterm deliveries, and 8.2% of small for gestational age. Approximately 76.5% of low birth weight impact diarrhea, respiratory disorder, fever, and omitting were also documented (Fig. **4**).

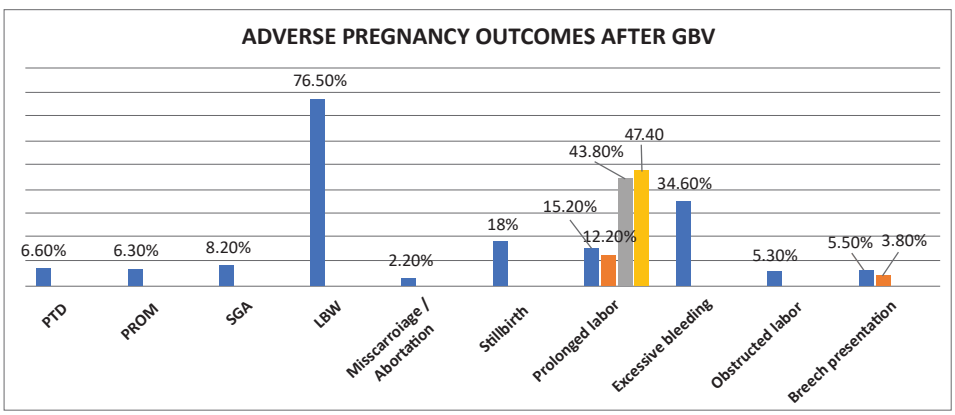

Fig. (4). Adverse Pregnancy Outcomes after Gender Based Violence Incidents during Pregnancy.

A few included studies reported odds of outcome after GBV exposure, the positive association was reported for low birth weight, increased infant mortality, infant diarrhea & vomiting, respiratory distress, fever, and pre-mature birth in neonates

delivered by mother experienced gender-based violence (Table **2**).

Table 2. Reported Odds Ratio of Neonatal Complications after Gender Based Violence during Pregnancy.

Infant Outcomes after GBV						
LBW	**Child Mortality**	**Infant Diarrhea**	**Respiratory Distress**	**Fever**	**Infant Vomiting**	**Premature Birth**
OR, 4.767; CI 95% 2.515,9.034	OR, 1.10 95% CI - 1.05-1.15	OR 1.50, 95 % CI 1.10–2.04	OR 1.48, 95 % CI 1.13–1.93	OR 1.63, 95 % CI 1.23–2.15	OR 2.78, 95% CI 1.23–6.28	OR, 1.09, 95% CI: 0.86–1.38
OR, 1.34, 95% CI: 0.97–1.85						

DISCUSSION

This review analyzed the peer-reviewed original articles that reported adverse effects of gender-based violence and intimate partner violence during pregnancy upon pregnancy, and maternal and fetal health outcomes [32]. The included studies have been identified based on inclusion criteria and results strategies, the prevalence reported in these studies was limited however gender-based violence prevalence is still not elaborated properly [33]. The prevalence has been reportedly higher in developing countries, although developed nations still have indicated the frequency of GBV during pregnancy [34-36]. GBV or IPV in Pakistan was reported as the highest in our review, indicating 53% of prevalence including some kind of physical, emotional, financial, or sexual abuse experienced at least once in a lifetime during pregnancy by intimate partners or family members. [37]. The results of this review have been categorized into two endpoints, primary endpoint of the review is to assess the effect of GBV during pregnancy on maternal health and pregnancy outcomes. The results of referenced studies were divided into further two categories of physical outcomes and psychological outcomes, results indicated a higher prevalence of prolonged labor [1]. As this adverse effect was reported in almost all studies, excessive bleeding during delivery, [34] obstructed labor requiring intensive medical help, and [17] breech presentation of the fetus was reported [16]. However, Pre-mature rupture of membrane (PMRM) [29] was also reported in studies, LBW, [28] SGA, IUGR, and in extreme cases, stillbirth, miscarriage, and abortion were also reported [38]. Psychological disorders are relatively more difficult to diagnose and manage, however, post-partum depression is reported frequently in mothers who suffered from GBV during pregnancy [16,39,40]. Second endpoint of the review assessed the effect of GBV during pregnancy on fetal health, reporting infant diarrhea more frequently, along with fever, vomiting, and respiratory distress [41, 42]. The significant association between adverse maternal and fetal outcomes and gender-based violence has been evaluated extensively however, the prevalence has not been decreasing at the same pace. A hefty number of the meta-analysis are been published indicating the association of GBV/IPV or family member violence on females during pregnancy and its adverse effects on the physical, psychological, and sexual health of the mother [16,43]. Long-term follow-up studies of children born to mothers who suffered from GBV during pregnancy indicated delayed milestones, slower cognitive skills, and declined growth patterns during the first 1000 days of life [26,44,45]. The actual prevalence of GBV/IPV is not been reported correctly due to the hesitancy of females for admitting the abuse and fear of being left alone during pregnancy. In developing countries like Pakistan, India, and Bangladesh the population rate is much higher compared to health care facilities providing reproductive, gynecological, and obstetrics care, understanding GBV, and its form, and types, and knowing their right are other drawbacks to reporting violence.

So why may IPV exposure result in unfavorable pregnancy outcomes? The connection may be explained by a variety of reasons, including adverse psychological and physical impacts, as well as alterations in conduct [32,33,44-46]. Abuse involving the abdomen, for instance, trauma might result in early labor, membrane rupture, uterine rupture, placental abruption, and other factors that can all too premature birth or possibly death of the fetus. IPV has furthermore related to a rise in the number of UT infections, which have been linked to premature birth. Furthermore, IPV during pregnancy may make chronic conditions like hypertension and gestational diabetes worse, both of which have an impact on the health of the unborn child [32-35,43,46]. Lastly, uterine and cervical infections, such as HIV and Other sexually transmissible infections (STDs) are more common. Compared to non-abused pregnant mothers, rates among those who Abuse places them at higher risk for intrauterine limitation of development and premature birth [35]. Pregnancy has indirect negative impacts on physical and mental health. Numerous aspects of mental health and IPV have been connected and also IPV victims who are female, either were discovered to have a nine-fold rise outside of pregnancy [46]. Likelihood of developing a mood or anxiety condition could greatly increase more likelihood to require mental health-related hospitalization issues, and half of the women were referred to a remote mental health facility. Their healthcare provider's health center turned out to be assaulted women who go unreported. Inadequate prenatal care usage is one of the main health behavior factors linked to IPV, preterm, and LBW. According to numerous investigations, there is a connection between IPV and women starting prenatal care later than other women [42]. Women who experience IPV are more likely to start precaution in the third trimester and up to 6.5 weeks later than other women. In addition, women who have experienced IPV during pregnancy are far more likely than non-abused women to skip three or more prenatal appointments

(45% vs. 28%). The World Health Organization's accreditation of healthcare organizations. Since pregnancy may be the only phase a female will consistently get health assessment, ACOG sent information about IPV, including indicators of abuse, to all 28,000 of its members to reaffirm their commitment to tackling the issue [37,43,47,48].

INVESTIGATIVE ATTITUDES AND BEHAVIORS

Despite the recommendations, not all healthcare facilities routinely screen patients for IPV, let alone do so when they are pregnant. Studies' conclusions about whether medical professionals believe they should and whether they screen female patients for IPV differ widely. Especially in developing countries where reporting GBV and IPV are highly unlikely and treated as taboo, healthcare providers have no idea how to screen IPV, and if they got to know about the possible abuse during pregnancy they avoided being involved [5]. In a few cases, upon counseling and interference by health care providers victims were taken back by their intimate partners or family members and avoided further antenatal visits [9, 49-51].

Addressing GBV is the key to national and global progress. GBV is a global issue and due to its complexity and recognition in different cultures as a private problem, no indication founded precise method is available.

CONCLUSION

This review concludes that GBV/IPV during pregnancy is a major concern holding maternal and fetal health in decline, effect of GBV/IPV not only affects maternal physical health but psychological, social, and sexual health also gets compromised. However, the adverse outcomes of GBV/IPV upon neonate are alarmingly higher and require immediate action as in developing countries child mortality is already higher. GBV/IPV incidents result in LBW, IUGR, SGA, preterm deliveries, miscarriages, and other associated life-threatening factors only increasing the chances of mortality many folds. Mothers experiencing postpartum depression and PTSD are not fit to take care of a newborn and may neglect their child resulting in more grave consequences to both mother and child. It is obvious that pregnant IPV is a major issue in the world and is linked to poor results for newborns. Direct physical, mental health, and behavioral effects are only a few of the many reasons why IPV may affect LBW and preterm births. These processes may all make it easier for healthcare professionals to identify the women who are most at risk. Although it is crucial to screen for IPV during pregnancy, due to time restrictions and a lack of defined assessment guidelines, many prenatal doctors do not frequently ask about IPV. Additional research is required to determine effective strategies to lower the rates of pregnant IPV and associated effects. More training is required to help healthcare practitioners recognize and manage pregnancy IPV.

AUTHORS' CONTRIBUTION

- **Sameera Rizvi**: Objective, Literature search.
- **Sana Tariq**: Write-up, Literature interpretation.
- **Amira M. Ali**: Literature search, Literature interpretation.
- **Tazeen Saeed Ali**: Final approval.

CONFLICT OF INTEREST

None declared.

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