



## Research Article

## Golden Billion Theory and Psychological Stress: A Cross-Sectional Study in Two Middle Eastern Countries

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## Abstract

**Background:** The Golden Billion theory posits global inequality where a small elite benefits at the world's expense, often linked to resources and geopolitical power dynamics. **Objective:** To explore beliefs about the Golden Billion theory and associated psychological stress, focusing on impacts on vaccine refusal and belief in man-made pandemics of COVID-19. **Methods:** This cross-sectional study in Jordan and Iraq explored beliefs about this theory and associated psychological stress. A convenience sample of 1113 participants was recruited via social media platforms (Facebook, WhatsApp, and X) between 14 June 2024 and 13 October 2024. **Results:** Sex, knowledge about the "Golden Billion theory," and vaccine-related conspiracy beliefs were significantly associated with anxiety levels ( $p < 0.001$ ). Higher education ( $OR=5.83, p=0.001$ ), having heard about the "Golden Billion theory" ( $OR=3.43, p=0.001$ ), believing COVID-19 was man-made ( $OR=2.38, p=0.001$ ), and believing vaccines reduce world population ( $OR=3.83, p=0.001$ ) were all linked to higher anxiety. **Conclusions:** The perception of intentional population control through pandemics and wars is strongly correlated with higher levels of anxiety, with significant associations identified between gender, knowledge of the "Golden Billion theory," and beliefs regarding vaccines.

**Keywords:** Anxiety; Conspiracy; Golden Billion theory; Middle East; Stress, Vaccine.

## نظرية المليار الذهبي والضغط النفسي: دراسة مقطعية في دولتين في الشرق الأوسط

## الخلاصة

**الخلفية:** تفترض نظرية المليار الذهبي عدم المساواة العالمية حيث تستفيد نخبة صغيرة على حساب العالم، وغالبا ما ترتبط بالموارد وديناميكيات القوة الجيوسياسية. **الهدف:** استكشاف المعتقدات حول نظرية المليار الذهبي والضعف النفسية المرتبطة به، مع التركيز على تأثيرها على رفض اللقاحات والاعتقاد بالأوبئة البشرية لكوفيد-19. **الطرائق:** استكشفت هذه الدراسة المقطعية في الأردن والعراق المعتقدات حول هذه النظرية والضعف النفسية المرتبطة بها. تم اختيار عينة من 1113 مشاركا عبر منصات التواصل الاجتماعي (فيسبوك، واتساب، وإكس) بين 14 يونيو 2024 و 13 أكتوبر 2024. **النتائج:** الجنس، والمعرفة حول "نظرية المليار الذهبي"، ومعتقدات المؤامرة المتعلقة باللقاحات ارتبطت بشكل كبير بمستويات القلق ( $p=0.001$ ). التعليم العالي ( $OR=5.83, p=0.001$ )، وبعده سماعه عن "نظرية المليار الذهبي" ( $OR=3.43, p=0.001$ )، والاعتقاد بأن كوفيد-19 من صنع الإنسان ( $OR=2.38, p=0.001$ )، والاعتقاد بأن اللقاحات تقلل من سكان العالم ( $OR=3.83, p=0.001$ ) كلها مرتبطة بزيادة القلق. **الاستنتاجات:** يرتبط تصور السيطرة المتعمدة على السكان خلال الأوبئة والحروب بقوة بمستويات أعلى من القلق، مع تحديد ارتباطات مهمة بين الجنس، ومعرفة "نظرية المليار الذهبي"، والمعتقدات المتعلقة باللقاحات.

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## INTRODUCTION

The Golden Billion theory is a socio-economic and political idea that asserts that the world's richest population constitutes a small group that takes advantage of the other countries by having an extremely high standard of living. It has been frequently brought up in topics related to global inequity, resource distribution, and international power shifts. The theory has been mainly embraced in the West's periphery, especially during times of global crisis like the COVID-19 pandemic, when it has been associated with increased

fears, disbelief towards authorities, and noncompliance with health regulations [1,2]. Theories of conspiracy such as the Golden Billion theory are not simply restricted to the fringe but are very much a part of the psychological and social processes. According to Douglas and his co-authors, there are three main driving forces behind belief in conspiracy theories: epistemic motives, which are the desire for knowledge and certainty; existential motives, which are the need for security and control; and social motives, which are the desire to uphold a positive self-image and group identity [3]. During the uncertain times of pandemics, these reasons became very prominent as

people looked for explanatory models to cut down on cognitive dissonance and regain a sense of order [4,5]. Van Prooijen discussed this idea in greater detail by using the uncertainty reduction theory and claimed that conspiracy theories were “good” and “bad” guides to the understanding of such events because they were simple, yet often wrong, explanations for the complex and ambiguous events [6]. During the COVID-19 pandemic, misinformation was spreading rapidly, and the lack of clear and consistent communication from the authorities was creating a situation that was very conducive to the growth of conspiracy narratives. These narratives, although initially providing a degree of lucidity, usually worsen anxiety and paranoia by making people extremely alert to the perceived threats, therefore causing anxiety and paranoia to grow [7,8]. The findings of numerous studies have revealed that anxiety, neuroticism, and the inability to think critically are the major predictors of people accepting conspiracy theories. Such people tend to believe in conspiracy theories, especially when the stories that point to global elites or institutions as the source of the problem match their initial distrust [5]. One such instance of this was during the COVID-19 pandemic when the belief in depopulation conspiracies, which included claims that the pandemic was an act to lower the global population, was linked to vaccine hesitancy and the refusal of the public to comply with health regulations [1,2]. Social media has greatly aided in the spread of these theories. By nature, algorithms that give preference to content that evoke strong emotions tend to push conspiracy stories, and these are the ones that the users who are already affected by fear and distrust can easily relate to. The emotional contagion effect not only facilitates the spread of conspiracy beliefs but also heightens the levels of anxiety and loneliness among the believers, since people who hold such views might shy away from public debates or from complying with health authorities [7]. The dynamics in the Middle East are particularly strong in this respect. A study that involved nurses in Jordan showed that 25% did not want the COVID-19 vaccine and another 25% were not sure, with conspiracy theories and worries about hidden agendas being the main reasons for their uncertainty [9]. This is an indication of a regional trend that is characterized by mistrust of global institutions and fear of outside control, which together determine public attitudes towards health emergencies. This study is grounded in the motivational theory of conspiracy belief and the uncertainty reduction theory [6]. During times of crisis, people find it easier to believe in conspiracy theories, and the frameworks illustrate how these beliefs relate to psychological states such as anxiety. According to our ideas, (1) the Golden Billion theory will make people more anxious because it makes global events seem like life-or-death situations; (2) people who believe in conspiracy theories will be more anxious because they don't trust authorities and feel helpless; and (3) professional education, which is often linked to critical thinking, can actually make people more anxious because it lets them get more involved with

complicated conspiracy stories. This study aims to assess perceptions of the Golden Billion theory in Jordan and Iraq and investigate 1) the prevalence and predictors of belief in the theory, 2) the relationship between such beliefs and anxiety levels, particularly regarding pandemics and vaccines, and 3) the role of demographic factors (e.g., education, gender) in shaping these perceptions and their psychological impact.

## **METHODS**

### *Study setting, design, and participants*

This cross-sectional study was conducted in two countries located in the Eastern Mediterranean Region (EMR), namely, Iraq and Jordan. An online survey was deemed the most feasible and ecologically valid method for this study, as it allowed efficient recruitment of participants exposed to digital conspiracy narratives (e.g., via social media). The recruitment period for this study began on 14 June 2024 and ended on 13 October 2024. The inclusion criteria included being a citizen of Jordan or Iraq, being aged 18 or older, and being able to fill out the online questionnaire. An online link to the questionnaire, along with an introductory letter about the study, was sent to participants via social media platforms like Facebook®, WhatsApp®, X-®, and email addresses, and respondents were asked to share the questionnaire link with their relatives, friends, and social networks.

### *Study instrument*

The questionnaire comprised 27 items distributed over 3 sections. The first section contained 5 questions on participants' socio-demographic characteristics (age, sex, marital status, education, and country of residence). The second section comprised 15 questions and included questions about the conspiracy and the Golden Billion theory, the extent to which people believe in the reality of the existence of epidemics, and participants' general view of pharmaceutical and vaccine companies. The third section of the questionnaire was a generalized anxiety disorder scale (GAD-7), which is a 7-item and easy-to-perform initial screening tool for generalized anxiety disorder. Anxiety levels vary between minimal, mild, moderate, and severe based on the total score of the scale [10]. The questionnaire was first developed in English, then it was translated into Arabic (the native language of respondents) by two researchers who are both Arabic natives and fluent in English.

### *Survey development*

The items in the second section of the questionnaire (15 questions) were drafted based on the existing literature and researchers' experience. Three researchers checked the content of the questionnaire and its face validity before the final approval. To ensure its reliability, the

questionnaire was pilot tested with the first 30 responses. Based on these responses and the feedback, refinements were made. The 15-item conspiracy belief scale demonstrated good internal consistency (Cronbach's  $\alpha = 0.87$ ). A post-hoc power analysis (GPower 3.1) confirmed that the sample size ( $n = 1,113$ ) provided  $>90\%$  power to detect small effects (Cohen's  $d = 0.2$ ) in logistic regression at  $\alpha = 0.05$ . The responses of the pilot testing were excluded from the final analysis.

### **GAD-7 scoring system**

The GAD-7 is a questionnaire that screens and measures the severity of anxiety. The score is 0-21, with higher scores indicating a higher level of severity of anxiety. More specifically, 0-4 is classified as minimal anxiety, 5-9 as mild anxiety, 10-14 as moderate anxiety, and 15-21 as severe anxiety [10].

### **Ethical approval and consents**

The Institutional Review Board (IRB) of Ethics Committee, Yarmouk University, Jordan (No: IRB/2024/329) approved the study. While ethical approval was obtained from a Jordanian IRB, the absence of local Iraqi IRB approval may be seen as a limitation. However, this decision was justified based on the minimal-risk nature of the online survey, adherence to international ethical guidelines. This is a common practice in multi-country online surveys, where the primary researcher's institution provides ethical oversight, particularly when the study involves minimal risk and no direct interaction with participants. All study procedures were implemented according to the 1964 Helsinki Declaration guidelines and its later amendments. All participants gave their consent to participate by reading the following statement and ticking a box next to it: "Completing the questionnaire would be considered consent to voluntary participation." Participants were informed that the study would not disclose any personal information and that their data would be stored under high-security settings with only the research team having access to this data.

### **Statistical analysis**

According to clinical intervention thresholds that had been set previously [10], anxiety scores were classified into two categories, namely, 'minimal-mild' (0-9) and 'moderate-severe' (10-21). Even though this classification may cause a slight loss of information, it is in sync with the practices used in clinical environments and, at the same time, guarantees adequate statistical power for logistic regression analysis. Ordinal logistic regression was, however, a choice, but then the Brant test showed that the proportional odds assumption was

violated ( $p < 0.05$ ), which led to the use of binary logistic regression as the appropriate option. The Statistical Package for Social Sciences (SPSS-IBM, Chicago, IL, USA) was used to analyze the data. Categorical variables were reported as frequency counts and percentages. A cross-tabulation analysis using the chi-square test was employed to assess significant differences between categorical variables. Finally, a backward Wald stepwise binary logistic regression analysis was used to find the independent effect of each factor after possible confounders were taken into account. This was done for all statistically significant factors found in the cross-tabulation analysis. A  $p$ -value  $< 0.05$  was set for statistical significance.

## **RESULTS**

The results are based on the questionnaire responses of 1113 participants. The educational attainment of the sample (96.7% with at least a bachelor's degree) was much higher than the national averages of 10.9% for Iraq and 23.2% for Jordan [11], which shows the bias that is characteristic of online convenience sampling. As illustrated in Table 1, female participants were 59.3%, and males were 40.7%. Concerning attitudes of study participants towards pandemics, more than three-quarters think that Covid-19 was man-made, and most of them (95.7%) think there are other pandemics on the way.

**Table 1:** Demographic characteristics of the study population (n=1113)

Characteristic	n (%)
<i>Sex</i>	
Male	453(40.7)
Female	660(59.3)
<i>Age (year)</i>	
18-29	524 (47.1)
30-39	357(32.1)
40-49	178(16.0)
$\geq 50$	54(4.8)
<i>Marital status</i>	
Married	603(54.2)
Single	510(45.8)
<i>Education level</i>	
High school or less	37(3.3)
Bachelor's degree or more	1076(96.7)
<i>Country</i>	
Jordan	491(44.1)
Iraq	622(55.9)

Furthermore, two-thirds of participants (67.1%) think that strong organizations make wars or initiate pandemics aiming at reducing the world population to reach the "Golden Billion theory." These statistics are shown in Table 2. Some variables were found to have significant statistical differences with differences in the anxiety score. Noticeably, from the demographic factors of participants, only gender has significant statistical significance with anxiety score.

**Table 2:** Attitudes towards pandemics and demographic characteristics of the study population (n=1113)

Variable	No	Yes
I think that Covid-19 was man-made	841(75.6)	272(24.4)
I think there are other pandemics on the way	48(4.3)	1065(95.7)
I think the new pandemics are man-made	246(22.1)	867(77.9)
I think that there are some individuals or bodies control emerging of new pandemics aiming at reducing the world population	291(26.1)	822(73.9)
Did you hear about “Golden Billion theory”?	504(45.3)	609(54.7)
I changed my life-style behavior due to anxiety related to “Golden Billion theory”	547(49.1)	566(50.9)
Do you think that there is a secret plan by some individuals aiming at reducing the world population to reach “Golden Billion theory”	389(35.0)	724(65.0)
Did you find anything on the mass media proves or supports the “Golden Billion theory” idea?	633(56.9)	480(43.1)
Have you ever felt anxiety due to “Golden Billion theory” thoughts?	839(75.4)	274(24.6)
Do you think that strong organizations are targeting wars or pandemics aiming at reducing the world population to reach “Golden Billion theory”	366(32.9)	747(67.1)
Do you think that certain groups or individuals have the power and authority to control world population counts?	240(21.6)	873(78.4)
Do you think that drug companies intentionally hide the side effect of vaccines from people?	240(21.6)	873(78.4)
Do you think that vaccines such as COVID-19 vaccine play a role in reducing the world population to reach “Golden Billion theory”?	533(47.9)	580(52.1)
Do you think that vaccines are just a competitive game between companies?	372(33.4)	741(66.6)
Do you intend to take vaccines in any future pandemic?	633(56.9)	480(43.1)

Values are presented as frequency and percentage.

**Table 3:** Cross tabulation analysis of factors associated with Anxiety Score (n=1113)

Variable	Anxiety Score				p-value
	Minimal	Mild	Moderate	Severe	
<i>Sex</i>					
Male	170 (37.5)	157(34.7)	79(17.4)	47(10.4)	<0.001
Female	145 (22.0)	259 (39.2)	138(20.9)	118(17.9)	
<i>Age (year)</i>					
18-29	144(27.5)	209(39.9)	98(18.7)	73(13.9)	0.798
30-39	102 (28.6)	130(36.4)	72(20.2)	53(14.8)	
40-49	50(28.1)	61(34.3)	35 (19.7)	32(18.0)	
≥50	19(35.2)	16(29.6)	12(22.2)	7(13.0)	
<i>Marital status</i>					
Married	168(27.9)	245(40.6)	111(18.4)	79(13.1)	0.064
Single	147(28.8)	171(33.5)	106(20.8)	86(16.9)	
<i>Education level</i>					
≤ High school	12(32.4)	7(18.9)	11(29.7)	7(18.9)	0.102
≥ Bachelor's	303(28.2)	409(38.0)	206(19.1)	158(14.7)	
<i>Country</i>					
Jordan	142(28.9)	198(40.3)	87(17.7)	64(13.0)	0.139
Iraq	173(27.8)	218(35.0)	130 (20.9)	101(16.2)	
<i>I think that Covid-19 was man-made</i>					
No	87(32.0)	103(37.9)	47(17.3)	35(12.9)	0.310
Yes	228(27.1)	313(37.2)	170(20.2)	130(15.5)	
<i>I think there are other pandemics on the way</i>					
No	19(39.6)	14(29.2)	11(22.9)	4(8.3)	0.180
Yes	296(27.8)	402(37.7)	206(19.6)	161(15.1)	
<i>I think the new pandemics are man-made</i>					
No	81(32.9)	88(35.8)	49(19.9)	28(11.4)	0.161
Yes	234(27.0)	328(37.8)	168(19.4)	137(15.8)	
<i>I think that there are some individuals or bodies control emergence of new pandemics aiming at reducing the world population</i>					
No	91(31.3)	104(35.7)	60 (20.6)	36(12.4)	0.339
Yes	224(27.3)	312(38.0)	157(19.1)	129(15.7)	
<i>Did you hear about “Golden Billion theory”?</i>					
No	127(25.2)	181(35.9)	122(24.2)	74(14.7)	0.003
Yes	188(30.9)	235(38.6)	95(15.6)	91(14.9)	
<i>Have you ever felt anxiety due to “Golden Billion theory” thoughts?</i>					
No	258(30.8)	317(37.8)	157(18.7)	107(12.8)	<0.001
Yes	57(20.8)	99(36.1)	60(21.9)	58(21.2)	
<i>Do you think that drug companies intentionally hide the side effect of vaccines from people?</i>					
No	85(35.4)	86(35.8)	45(18.8)	24(10.0)	0.014
Yes	230(26.3)	330(37.8)	172 (19.7)	141(16.2)	
<i>Do you think that vaccines such as COVID-19 vaccine play a role in reducing the world population to reach “Golden Billion theory”?</i>					
No	173(32.5)	194(36.4)	96(18.0)	70(13.1)	0.022
Yes	142(24.5)	222(38.3)	121(20.9)	95(16.4)	
<i>Do you think that vaccines are just a competitive game between companies?</i>					
No	121(32.5)	146(39.2)	68(18.3)	37(9.9)	0.004
Yes	194(26.2)	270(36.4)	149(20.1)	128(17.3)	

Values are presented as frequency and percentage.

Other statistically significant factors with the anxiety score were attitudes and knowledge factors including hearing about the "Golden Billion theory," if the participant had ever felt anxiety due to "Golden Billion theory" thoughts, and if the participant thought that vaccines such as the COVID-19 vaccine play a role in reducing the world population to reach the "Golden Billion theory." These statistics and other statistics are shown in Table 3. To identify factors associated with moderate-severe anxiety, a logistic regression analysis was conducted. The results, presented in Table 4, show several significant associations. Participants with a bachelor's degree or higher were more likely to have moderate-severe anxiety compared to those with a high school education or less (OR = 5.83, 95% CI: 2.73–12.44,  $p= 0.001$ ). This finding suggests that higher educational

levels may be associated with greater awareness or concern about conspiracy theories, thus increasing anxiety levels. Participants who had heard about the "Golden Billion theory" were three times more likely to have moderate-severe anxiety compared to those who had not (OR = 3.43, 95% CI: 2.47–4.76,  $p= 0.001$ ). Similarly, those who believed that new pandemics are man-made showed a higher likelihood of moderate-severe anxiety (OR = 2.38, 95% CI: 1.45–3.91,  $p= 0.001$ ). Finally, participants who believed that vaccines, such as the COVID-19 vaccine, play a role in reducing the world population to achieve the "Golden Billion theory" were nearly four times as likely to experience moderate-severe anxiety (OR = 3.83, 95% CI: 2.74–5.37,  $p= 0.001$ ).

**Table 4:** Logistic regression analysis of factors associated with existence of moderate-severe anxiety

Variable	Odds ratio	95% Confidence interval		<i>p</i> -value
		Lower	Upper	
<i>Education level</i>				
≤ High school	1.0*			
≥ Bachelor's	5.83	2.73	12.44	0.001
<i>Did you hear about "Golden Billion theory"?</i>				
No	1.0*			
Yes	3.43	2.47	4.76	0.001
<i>I think the new pandemics are man-made</i>				
No	1.0*			
Yes	2.38	1.45	3.91	0.001
<i>Do you think that vaccines such as COVID-19 vaccine play a role in reducing the world population to reach "Golden Billion theory"?</i>				
No	1.0*			
Yes	3.83	2.74	5.37	0.001

\* Reference for other categories.

## DISCUSSION

This study explored the demographic characteristics, attitudes towards pandemics, and anxiety levels associated with the concept of the "Golden Billion theory" in Jordan and Iraq. The results of the current study showed that most participants believed that COVID-19 was man-made, and almost all anticipated future pandemics. Approximately two-thirds believed that strong organizations intentionally promote wars or pandemics to reduce the global population. When people face high stress or unpredictable situations, such as the post-pandemic economic consequences, their feeling of control will decrease. Explaining a pandemic with the "Golden Billion theory" might provide a gloomy feeling of certainty. Psychologically, believing that there is an "evil hand" controlling the world is frequently less terrifying than believing that it is out of control. However, as our GAD-7 data shows, this adaptation comes at a high price, significantly increasing baseline anxiety. These results align with existing literature on conspiracy theories, which often thrive in times of uncertainty and global crises [12]. Gender, knowledge about the "Golden Billion theory," and beliefs about vaccine roles in population reduction were significantly associated with anxiety levels, with higher education being a significant predictor of increased anxiety. Our study found that most participants believed COVID-19 was man-made, a viewpoint commonly held in many

populations, as highlighted by Hakim (2021), who identified widespread conspiracy theories about SARS-CoV-2, including claims of the virus being engineered in a lab [12]. Similarly, Natrass (2023) noted the persistence of conspiracy theories across different pandemics, including COVID-19, with a significant portion of the population believing in various fabricated explanations about the virus's origins [13]. Our study observed that almost all participants anticipated future pandemics. This aligns with findings from Tsamakis *et al.* (2022), who discussed how the COVID-19 pandemic contributed to a heightened sense of uncertainty and increased belief in conspiracy theories, which may include expectations of future global health crises [14]. The notion that powerful organizations intentionally promote wars or pandemics to control the population resonates with the conspiracy theories discussed by Uscinski *et al.* (2022), who explored the widespread acceptance of such beliefs during the pandemic. They suggested that psychological factors, such as distrust in authorities and a tendency to attribute global events to malevolent forces, often exacerbate these views [15]. Our study's findings, where sex, knowledge about the "Golden Billion theory," and vaccine-related conspiracy beliefs were significantly associated with anxiety levels, align with studies like that of Ullah *et al.* (2021), who reported that misinformation regarding COVID-19 vaccines was associated with vaccine hesitancy and related anxiety in different global populations [16].

Furthermore, Fotakis and Simou (2023) found that belief in conspiracy theories negatively impacts vaccine acceptance, contributing to psychological stress and anxiety during the pandemic [17]. Our study found an unexpected association between higher education and increased anxiety, which might initially seem counterintuitive. Instead of education acting as a shield against different conspiracy theories, it may work as a lens magnifying them. Also, those with higher education usually have the cognitive tools to synthesize different information into complex (but false) conclusions. While individuals with low education might dismiss the "Golden Billion" as a fake story, those with higher education may connect the dots between global economics, historical interventions, and the pandemic. This deep engagement triggers hypervigilance, which leads to higher GAD-7 scores. As Sharabi (2024) suggested, individuals with higher education may engage more critically with information, potentially associated with greater anxiety [18]. This is consistent with Hammad *et al.* (2021), who observed that individuals with higher education in Jordan had fewer misconceptions about COVID-19, likely due to greater access to reliable information [19]. However, it contrasts with the findings of Sato *et al.* (2024), where individuals with higher socioeconomic backgrounds, often linked to higher education, were more likely to endorse conspiracy beliefs, such as those related to COVID-19 [20]. Similarly, Vranic *et al.* (2022) highlighted that overconfidence in one's own reasoning abilities, common among highly educated individuals, could contribute to an increased likelihood of endorsing conspiracy theories [21].

### Theoretical and practical implications

This study highlights the paradoxical role of higher education in exacerbating anxiety due to increased exposure to diverse and often conflicting information. It reinforces theories linking belief in conspiracy narratives with psychological distress and mistrust in global and health organizations, shaping public perceptions and behaviors. On a practical level, the findings emphasize the importance of developing tailored health literacy programs to address misinformation, targeting high-risk demographic groups, such as the highly educated, with specific interventions. Mental health support should be integrated to alleviate anxiety arising from conspiracy theories, while trust-building initiatives through transparent communication and community engagement are essential for improving public confidence in health authorities.

### Strengths and Limitations

This study benefits from a large sample size and detailed analysis of the relationship between demographic, attitudinal, and psychological factors. The inclusion of regression analysis adds robustness to the findings by

identifying significant predictors of anxiety. However, several limitations should be acknowledged. The use of convenience sampling via social media introduces selection bias, as participants were educated and internet-savvy. Caution is advised in generalizing findings to non- or low-educated people or those without internet access. Future studies should employ stratified sampling to address these limitations. Additionally, the cross-sectional design precludes causal inferences, and reliance on self-reported data may introduce response bias. Future research should consider longitudinal designs and more diverse populations to validate these findings.

### Conclusion

This study provides valuable insights into the perceptions and anxieties surrounding the "Golden Billion theory" in Jordan and Iraq, shedding light on the role of demographic factors, pandemic-related attitudes, and conspiracy beliefs in shaping public anxiety. The widespread belief that COVID-19 was man-made and the expectation of future pandemics reflect a pervasive distrust in global institutions. Our findings suggest that the perception of intentional population control through pandemics and wars is strongly correlated with higher levels of anxiety, with significant associations identified between gender, knowledge of the "Golden Billion theory," and beliefs regarding vaccines. Notably, higher levels of education were found to predict increased anxiety, suggesting a complex relationship between knowledge and belief in conspiratorial narratives. The findings of our study contribute to the growing body of literature on the psychological impact of conspiracy theories, misinformation, and pandemic-related anxieties. While some of our results align with previous studies, our research further emphasizes the need for targeted public health interventions to address misinformation, particularly in countries like Jordan and Iraq, where beliefs in conspiracy theories and the anticipation of future pandemics are prevalent. These results underscore the importance of addressing conspiracy theories in public health messaging and the need for interventions that can help manage anxiety related to pandemics. Future research should explore the interplay between sociopolitical factors, media influence, and mental health outcomes to better understand how to mitigate the harmful effects of such beliefs on public health behavior.

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### Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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