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THE IMPACT OF SOCIAL MEDIA ON THE SELF-MEDICATION OF MAGNESIUM GLYCINATE

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Abstract

Aim

To assess awareness of social media as information sources, usage patterns, and predictors of magnesium glycinate use among adults.

Objective

To investigate whether social media awareness and marketing are leading to self-medication with magnesium glycinate, irrespective of its potential adverse effects and contraindications.

Methodology

A cross-sectional study of 65 participants assessed their socio-demographics, awareness, information sources, usage patterns, and frequency of physician consultation. Chi-square tests and logistic regression were employed for analysis.

Results and Findings

Awareness was 87.7%, with social media as the primary source (49.2%). Awareness was significantly associated with use ($\chi^2 = 6.81$, $p = .009$); 47.4% of aware individuals had taken the supplement versus 0% of unaware individuals. Information source significantly influenced physician consultation ($\chi^2 = 9.63$, $p = .022$); 66.7% informed by healthcare professionals consulted a doctor, versus only 15.6% informed via social media. Logistic regression identified age (OR = 1.08, $p = .008$) and healthcare professional instruction (OR = 2.77, $p = .038$) as significant predictors of use. Notably, only 23.1% consulted a physician before use, and 35.4% received no usage instruction, indicating widespread self-medication practices.

INTRODUCTION

The use of social media platforms, including Twitter, Instagram, Facebook, WhatsApp, and Snapchat, has increased daily. These social media sites are utilised to gain access to the information required. Individuals refrain from contacting healthcare professionals and search through social media, which, according to research, leads to multiple forms of misinformation being conveyed (1). This scenario was seen during COVID-19, when inaccurate information was spread through social media platforms, and fear and anxiety were experienced by each individual (2). Similarly, many seekers use these sites for health information, out of curiosity, or to treat their conditions or symptoms (3, 4).

With increasing sources of social media platforms, these sites are also being utilised by Pharma companies for marketing purposes; in this way, a diverse range of drugs are advertised with their benefits only, irrespective of their adverse effects and contraindications (5). A recent study conducted in Pakistan states that 67% of the 601 university students explored social media for health-related information (6). Magnesium is involved in over 300 biochemical events, including DNA and RNA synthesis, metabolism, glycolysis, and the production of adenosine triphosphate. Results of a study have shown that magnesium supplements help to lower systolic blood pressure, possibly by increasing the excretion of sodium and its function as a natural calcium channel blocker,

thus causing blood vessels to relax. Other studies have shown conflicting results. Exercise causes a loss of magnesium in sweat and urine, and it alters the distribution of magnesium in the body. While magnesium has been related to blood pressure control and muscle recovery, there is a lack of information about its impact on maximum exercise performance and exercise-related blood pressure responses in people with different dietary intakes of magnesium (7).

It is the second most abundant intracellular cation and is involved as a cofactor in over 600 enzymatic reactions. Total body magnesium is about 22-26 g, and its balance is regulated by the amount absorbed from the intestine and the amount excreted by the kidney. Its deficiency, or hypomagnesemia, can lead to muscle spasms, heart rhythm problems, neuromuscular irritability, and cardiovascular complications, particularly in patients with diabetes. The recommended daily intake of magnesium is about 300 mg/day for women and 350 mg/day for men. Magnesium exists as organic and inorganic compounds, and their bioavailability also differs. Organic compounds, like magnesium glycinate, have higher solubility. Bioavailability of any drug or nutrient also depends upon its formulation, food intake, and dose (8). Magnesium is vital for cardiovascular, skeletal, and neurological functions (9).

Magnesium deficiency has been linked to type 2 diabetes, cardiovascular diseases, hypertension, metabolic syndrome, depression, and insulin resistance, demonstrating its role in chronic diseases. However, there is a deficiency in diagnosing it, and this needs to be addressed urgently. The increasing demand for dietary supplements has resulted in a surge in magnesium supplements. However, there is a deficiency in terms of appropriate knowledge, as people seek information from non-medical sources, leading to inappropriate use (10).

Magnesium, being an important electrolyte that helps in numerous enzymatic reactions, also has a role in bone mineralization, muscle relaxation, and various cellular functions (11). There have been studies related to the bioavailability of different magnesium salts, where magnesium glycinate has good absorption and is stable at even low doses (12). And multiple research has shown their results in reducing anxiety and stress (9). Therefore, the magnesium glycinate supplement marketing trend has increased on social media, targeting symptoms such as migraine relief, stress reduction, and premenstrual syndrome (PMS), which are the most common factors faced by every individual nowadays (13). None of these social media platforms highlighted that intake of magnesium may lead to gastrointestinal discomfort, and an individual with kidney disease may need to consult their physician before starting this supplement (14).

The role of this study is to indicate that social media has a high impact of self medication of magnesium glycinate.

METHODOLOGY

Study Design:

This study is a small online-based cross-sectional survey for a pilot study conducted in Karachi in January 2026. The questionnaire was made on Google Form and shared with diverse people in different WhatsApp groups. No funding was taken for this research.

Data Collection tools:

The questionnaire consists of 10 questions, including demographic variables (Age, Gender, education, and field of work), and others are closed-ended multiple choice questions about magnesium glycinate awareness, whether this awareness is from social media, and whether they have started taking the supplement with or without physician consultation.

Analysis:

Microsoft Excel was used for data entry, and statistical analysis was performed using SPSS version 20. Qualitative data were presented as percentages and numbers, while Chi square test was applied to test the association between variables. Logistic regression was also applied for reasons to use magnesium glycinate. A p-value of less than 0.05 was considered statistically significant.

RESULT:

TABLE 1. Socio-demographic Characteristics of Participants

Variable	Category	n	%
Age (years)	Mean ± SD	33.2 ± 9.7	
Gender	Male	27	41.5
	Female	38	58.5
Education	Secondary or below	5	7.7
	Graduate (Bachelors)	27	41.5
	Postgraduate (Master's or Others)	33	50.8
Industry/Field of work	Healthcare & Life Sciences	41	63.1
	Education & Training	3	4.6
	Corporate/Business & Finance	5	7.7
	Other	16	24.6

Table 1 provides a summary of the socio-demographic characteristics of the (n=65) participants. The mean age of these respondents was 33.2 years (SD 9.7), with ages ranging from 15 to over 50. Most participants were female (58.5%), while males accounted for 41.5%. In terms of education, over half had postgraduate qualifications (50.8%), followed by bachelor's degree holders (41.5%), and the remaining group consisting of those with only a secondary education or less (7.7%). Participant job sectors were predominantly in the Healthcare and Life Sciences (63.1%), which demonstrates that most respondents worked in a health-related field. Smaller percentages worked in Corporate/Business & Finance (7.7%), Education & Training (4.6%), and there was a total of 24.6% representing the "Other" category, including hospitality, technology, and public service sectors.

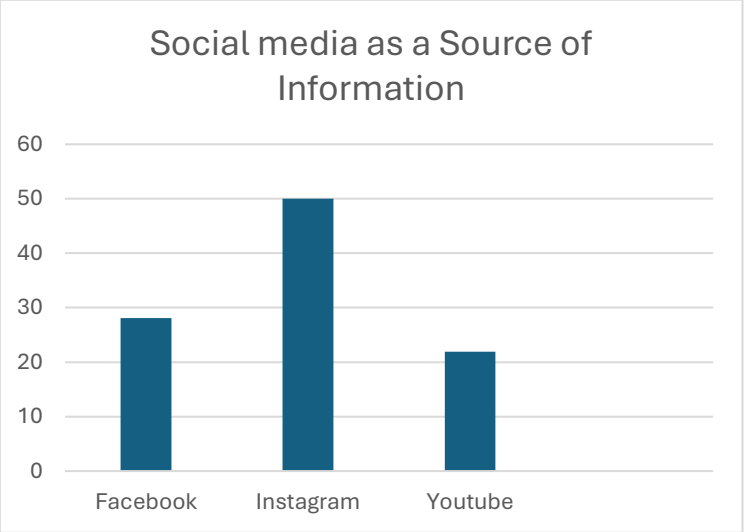
TABLE 2. Awareness of Magnesium Glycinate

Variable	Category	n	%
Have you heard of magnesium glycinate?	Yes	57	87.7
	No	8	12.3
Source of information	Social media	32	49.2
	Healthcare professional	6	9.2
	Friends/family	3	4.6
	Internet (non-social media) / Others	9	13.8

Out of all respondents, 87.7% have heard about magnesium glycinate, but 12.3% have not know what it is. Social media was the primary source for 49.2% of those who were aware of magnesium glycinate. Fewer respondents got their information from their doctors and other health professionals (9.2%), mothers and fathers or other relatives (4.6%), or other types of media like websites (13.8%) (Table 2).

TABLE 3. Social media as a Source of Information (n=32)

Platform	n	%
Facebook	9	28.1
Instagram	16	50.0
YouTube	7	21.9



Sources of information on magnesium glycinate via social media as shown in table 3 were reported by participants (n=32) having learned about the product from social media. Instagram was used by half of the participants, thus it had the highest frequency of use, followed by Facebook with 28.1%, and then YouTube with 21.9%, as they were used to obtain information on magnesium glycinate.

TABLE 4. Magnesium Glycinate Usage Pattern

Variable	Category	n	%
Have you started taking magnesium glycinate?	Yes	27	41.5
	No	38	58.5
Person providing instruction was healthcare professional	Yes	20	30.8
	No	22	33.8
	None	23	35.4
Consulted a doctor before use	Yes	15	23.1
	No	50	76.9

Table 4 presents the usage patterns of magnesium glycinate among the study participants (n = 65). Overall, 41.5% of them had begun taking magnesium glycinate, while 58.5 % of them had not begun taking magnesium glycinate. Out of all participants, 30.8% of those using magnesium glycinate were given information on how to take it by a health care provider, 33.8% of the participants had a non-health care provider give them instructions on how to take magnesium glycinate, and 35.4 % of the participants had no instructions whatsoever on how to take magnesium glycinate. As far as consulting a physician prior to taking magnesium glycinate, only 23.1% of the participants consulted with a physician before using magnesium glycinate, whereas 76.9% of the participants did not consult with a medical professional.

TABLE 5. Association Between Awareness and Use (Chi-square)

Heard of magnesium glycinate	Started taking (Yes)	Started taking (No)	χ^2	Df	p-values
Yes	27	30	6.81	1	0.009
No	0	8			

Table 5 shows the relationship between individuals' awareness of magnesium glycinate and whether they have taken this supplement. Out of those who were aware of magnesium glycinate, 27 (47.4%) have taken it, while 30 (52.6%) have not taken it. None of the individuals who did not know about magnesium glycinate have taken it, and all (8; 100%) have not started taking it yet. Analysis with chi-square statistic showed a statistically significant relationship between magnesium glycinate use and individuals who were aware of magnesium glycinate (χ^2 = 6.81; df = 1; p = .009), which indicates that individuals who were aware of magnesium glycinate are significantly more likely to have started taking magnesium glycinate than those who are not aware.

TABLE 6. Association Between Source of Information and Doctor Consultation (Chi-square)

Source of information	Consulted doctor (Yes)	Consulted doctor (No)	χ^2	df	p-values
Healthcare professional	4	2	9.63	3	0.022
Social media	5	27			
Friends/family	1	2			
Internet / Others	5	4			

Table 6 presents the association between the source of information regarding magnesium glycinate and whether individuals had consulted with their physician prior to taking the magnesium glycinate. Of the 4 (66.7%) of participants who received their information from healthcare providers, they had consulted with their physician. Only 5 (15.6%) of participants received their information from social media and had consulted. One-third (1; 33.3%) of participants received their information from friends/family and had consulted. Five (55.6%) of the participants received their information from other internet or resource-based sources and had consulted them. Chi-square analysis revealed a statistically significant association between the source of information and whether participants consulted their physician before taking magnesium glycinate (χ^2 = 9.63; df = 3; p = .022).

TABLE 7. Logistic Regression: Predictors of Magnesium Glycinate Use

Variable	B	SE	OR (95% CI)	p-value
Age (years)	0.08	0.03	1.08 (1.02-1.15)	0.008
Female gender	0.55	0.44	1.73 (0.73-4.11)	0.210
Higher education (Graduate/Postgrad)	0.68	0.42	1.97 (0.87-4.47)	0.103
Information from social media	-0.12	0.50	0.89 (0.36-2.19)	0.812
Instruction by a healthcare professional	1.02	0.49	2.77 (1.06-7.23)	0.038

Table 7 shows the outcomes from a logistic regression analysis to identify reasons for being given magnesium glycinate use among participants. The dependent variables are being prescribed or prescribed magnesium glycinate (Yes/No). Age was a statistically significant predictor of magnesium glycinate use, as each year of ageing was associated with an increased likelihood (1.08-fold) of using magnesium glycinate (OR=1.08, 95% CI 1.02-1.15, p=0.008). Assembly of Professionals also significantly increased the odds of using magnesium glycinate (OR=2.77, 95% CI 1.06-7.23, p=0.038). Female gender (OR=1.73, 95% CI 0.73-4.11, p=0.210), education being higher than participants (OR=1.97; 95% CI 0.87-4.47 p=0.103), and obtaining information about using magnesium glycinate through social media were not statistically significant predictors of magnesium glycinate use (OR=0.89; 95% CI=0.36-2.19 p=0.812).

DISCUSSION:

This study offers insightful information about magnesium glycinate awareness, information sources, and usage patterns among a workforce

in the healthcare industry that is primarily well-educated. The results show a number of noteworthy patterns that have substantial ramifications for clinical practice and public health.

Initially, awareness became a key factor in determining use. People who are aware of the supplement are significantly more likely to take it, as evidenced by the statistically significant correlation between awareness and magnesium glycinate consumption ($\chi^2 = 6.81$, $p = .009$). This demonstrates how product exposure and health literacy influence supplement uptake behaviors.

Second, the information's source has a significant impact on how people seek medical attention. Less than one-sixth of those exposed through social media sought medical advice, whereas two-thirds of those informed by healthcare professionals did so, according to the significant association between information source and physician consultation ($\chi^2 = 9.63$, $p = .022$). Given that social media was the participants' primary information source (49.2%), this discrepancy highlights the possible dangers of using supplements without professional supervision.

Third, two significant predictors of magnesium glycinate use were found using logistic regression analysis. Older people may be more proactive about supplement use, perhaps as a result of age-related health concerns, as age was found to be a significant factor (OR = 1.08, $p = .008$), with usage odds rising by 8% for every extra year. More significantly, getting training from a medical expert was the best indicator of supplement use (OR = 2.77, $p = .038$), giving participants almost three times the chance of taking the supplement. This result reaffirms how important medical advice is when it comes to supplement adoption.

Fourth, a serious safety issue was discovered by the study. Only 23.1% of participants sought medical advice prior to taking magnesium glycinate, and 35.4% did not receive any instruction on how to use the supplement, even though healthcare professionals have a significant impact on use. There appears to be a disconnect between supplement uptake and proper medical supervision when professional advice predicts use, but most users proceed without it.

Lastly, in the regression model, use was not independently predicted by demographic variables like gender, education level, or social media exposure. This suggests that age and expert advice may have a greater influence on supplement behavior than other variables, even after controlling for other variables.

FUTURE IMPLICATIONS

Although there is strong statistical support for the relationships between awareness, information sources, and supplement use in this study, the sample was primarily selected from the life sciences and healthcare industries, which may have limited universal applicability. Future studies should examine these connections in a wider range of populations and investigate the clinical results of using magnesium glycinate under different degrees of medical supervision.

CONCLUSION

In conclusion, this study demonstrates that awareness and healthcare professional guidance are significant drivers of magnesium glycinate use, yet a substantial gap exists between supplement uptake and appropriate medical consultation, without this a supplement taken to help you in everyday life may lead to critical outcomes and worst-case scenarios (15). The findings underscore the need for enhanced patient education, greater healthcare provider involvement in supplement discussions, and improved health communication on social media platforms to ensure safe and informed supplement use.

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