

Investigate the Influence of Social Media Marketing Campaigns on the Acceptance of the Vaccination Program Approved by the Jordanian Ministry of Health Among Jordanian Families

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Abstract

Purpose: This study aims to investigate the impact of social media marketing campaigns on the acceptance of the vaccination program approved by the Jordanian Ministry of Health among Jordanian families. The study will focus on exploring the effectiveness of social media marketing campaigns in raising awareness about the importance of vaccination and increasing acceptance rates among Jordanian families.

Theoretical framework: After conducting a literature review, a framework was created to demonstrate the current state of research on the topic. While previous studies have touched on certain aspects of the topic, this particular study focuses on examining the influence of social media marketing on the

adoption and acceptance of vaccination programs that have been approved by the Jordanian Ministry of Health.

Design/methodology/approach: A scientifically reliable questionnaire was created and utilized to gauge the level of support for Jordanian national vaccination programs within families. The questionnaire was distributed via social media platforms, with a focus on targeting individuals, especially students. The study gathered data from Jordanian families, regardless of their size, with a total of 400 questionnaires distributed, and 381 complete and usable responses collected.

Findings: The findings of this study provide important insights into the role of social media marketing campaigns in promoting vaccination programs and increasing acceptance rates among Jordanian families

Research, Practical & Social implications: The study is expected to provide valuable information to policymakers and public health officials in designing effective vaccination campaigns and addressing vaccine hesitancy in Jordan.

Originality/value: The value of the study exploration how social media marketing impacts people's lives and its crucial role in fostering acceptance of vaccination programs and convincing the audience to take part.

Keywords: Social Media Marketing, Vaccination Program, Jordanian Ministry of Health

INTRODUCTION

The healthcare system in Jordan faced a significant burden during the 2020 COVID-19 pandemic, including the disruption of routine childhood vaccination services. The aim of this study was to describe, for the first time, the impact of the pandemic on vaccination coverage among Jordanian children and identify the key contributing factors. Nationwide vaccination rates were obtained from the Ministry of Health's electronic records for the years 2018-2020, including 220,057 Jordanian children in 2020. The dose administration records for each month of 2020 were compared to the baseline of 2018-2019. In addition, a cross-sectional survey was conducted between March and August 2021, enrolling a convenient group of adults aged 18 years or older who were Jordanian caregivers for vaccine-eligible children aged between 0-23 months from January 1, 2020, to the date of the interview. The data collected from the survey and the electronic records were used to identify the factors contributing to the decline in vaccination rates during the pandemic. The results of this study will provide valuable insights for policymakers and healthcare professionals in Jordan and other countries facing similar challenges during the COVID-19 pandemic. The survey aimed to address caregivers' adherence to routine vaccination during 2020-2021 and to identify the determinants of current and future vaccination adherence

using a multiple logistic regression model. The results showed that vaccination coverage significantly decreased in 2020 according to electronic records. The greatest decline was observed during the lockdown period from 21 March 2020 to 21 April 2020 (32.4%-46.8%), followed by a decline observed during the entry of the first wave during September-October 2020 (18.4%-22.8%). (Abu-Rish. et al.,2022). conducted a cross-sectional study to determine the prevalence and determinants of vaccination delay among children in three public health centres in Amman governorate during January-June 2019. The study found that 8.3% of children were vaccinated late, and the reasons for delay were related to age, birth order, mother's education level, and parents' employment status. The study highlights the importance of collecting data on vaccination delay to develop vaccination educational programs that improve parents' knowledge and awareness of vaccinations and assess the impact of these programs. Moreover, the authors suggest that future research should investigate other factors influencing vaccination delay, such as parents' knowledge and attitudes toward vaccinations, as well as nurses' experiences and perceptions of vaccination delay. (Salameh, et al.,2021). This passage highlights the importance of media and communication in promoting immunization, as biological, social, and cultural reactions from the public can sometimes hinder vaccination efforts. With online media being the primary source of information for many parents, it is particularly important to use this platform to disseminate accurate information about vaccines. Despite a growing body of literature on vaccination and the role of online media in healthcare, there is still much to be understood about parents' attitudes towards vaccinating their children and their varying levels of trust in vaccines. Further research is needed to explore these factors and to develop effective communication strategies to promote vaccination and improve public health outcomes. Overall, this passage underscores the importance of communication and media in promoting immunization and addressing public concerns and hesitancy towards vaccines. (Melovic, et al.,2020). This passage emphasizes the impact of socioeconomic status, media information, attitudes towards healthcare, and knowledge and awareness of vaccines on vaccine refusal. The reference to Larson et al. suggests that these factors are especially prevalent in developing countries. This highlights the importance of understanding the unique challenges and factors that contribute to vaccine refusal in different contexts, and developing tailored interventions to address them. Effective communication strategies that take into account cultural, social, and economic factors can be instrumental in addressing vaccine hesitancy and promoting immunization. Overall, this passage highlights the need for targeted approaches to address vaccine refusal, particularly in developing countries where the burden of vaccine-preventable diseases is often higher. It also underscores the critical role of communication and media

in addressing public concerns and promoting vaccination. (Larson, et al., 2011).

RESEARCH PROBLEM

The problem of low vaccination rates and vaccine hesitancy among Jordanian families has been well documented in the literature. According to a study by Al-Qerem (2020), the prevalence of vaccine hesitancy in Jordan is high, with up to 26% of parents refusing or delaying vaccinations for their children. Another study by Alzoubi et al. (2021) found that the COVID-19 pandemic has further exacerbated vaccine hesitancy in Jordan, leading to a decline in routine childhood vaccinations. The impact of social media on vaccine hesitancy and acceptance has also been a topic of research. A study by Betsch et al. (2012) found that exposure to anti-vaccine messages on social media can increase vaccine hesitancy among parents. On the other hand, a study by Pitts et al. (2018) showed that social media can be an effective tool for promoting vaccination and increasing vaccine acceptance among parents. Given the prevalence of vaccine hesitancy and the potential impact of social media on vaccine acceptance, the problem statement of the research is to investigate the effectiveness of social media marketing campaigns in increasing acceptance of vaccination programs approved by the Jordanian Ministry of Health among Jordanian families. The study seeks to address the research gap and explore the potential of social media marketing campaigns in promoting vaccination and addressing vaccine hesitancy in Jordan.

LITERATURE REVIEW

Previous studies have been conducted on the impact of social media marketing campaigns on vaccination acceptance, particularly in developing countries. For example, a study conducted in Nigeria found that social media was an effective tool for increasing awareness and knowledge of vaccines among mothers, which in turn led to an increase in vaccination coverage for their children (Oyo-Ita et al., 2016) & (Daoud & Otair, 2020). Similarly, a study in Pakistan found that social media campaigns played a key role in increasing awareness and knowledge about vaccines, resulting in an increase in vaccine acceptance among parents (Khowaja et al., 2016). The study also found that social media was particularly effective in reaching out to parents who lived in remote areas and had limited access to health care services. In another study conducted in India, social media campaigns were found to be effective in improving knowledge and awareness about vaccines among parents and in increasing vaccination coverage among children (Daoud, & Saadon. 2022)& (Jain et al., 2018). The study also found that social media was an effective tool for dispelling myths and misconceptions about vaccines

that were prevalent among parents. A study conducted in Egypt also found that social media campaigns were effective in increasing awareness and knowledge about vaccines among parents, resulting in an increase in vaccine acceptance among parents (Abdelmoneim et al., 2020). The study also found that social media was an effective tool for addressing concerns and fears about vaccines that were prevalent among parents. In addition to these studies, a systematic review of the literature conducted in 2018 found that social media campaigns were an effective tool for increasing vaccine acceptance and coverage, particularly in low- and middle-income countries (Chou et al., 2018) & Susanto (2022). The review identified several key factors that contributed to the success of social media campaigns, including the use of social influencers, the use of multimedia content, and the targeting of specific audiences. Overall, these studies suggest that social media marketing campaigns can be an effective tool for increasing vaccine acceptance and coverage, particularly in developing countries where access to health care services may be limited. However, the success of these campaigns depends on several factors, including the use of social influencers, the use of multimedia content, and the targeting of specific audiences. Therefore, it is important to develop social media campaigns that are tailored to the specific needs and concerns of the target audience in order to maximize their impact. Zhang, et al (2013). The findings from Sina Weibo present a fresh viewpoint on the use of social media for the HPV vaccine. For female adolescents, the HPV vaccine is effective, but the low vaccination rate points to a problem with HPV vaccine education and communication. Target audiences are engaged by microblogs using tweets about beauty or fashion. Followers ask about their health. Collaboration between well-known websites for women and experts in vaccination can help the target population learn more about the HPV vaccine and increase vaccination rates. It is beneficial to verify profiles for businesses and professionals to ensure credibility on microblogs both domestically and internationally. Al-Tammemi (2020). Since the COVID-19 outbreak's initial spark in December 2019, which the World Health Organization (WHO) later declared to be a global pandemic, all impacted nations have been putting various preventive and control measures in place to slow the disease's spread. Since there are currently no approved antiviral treatments or vaccines, the recently emerging virus brings uncertainty with it. This poses a significant challenge for decision-makers across a range of levels and industries. This article aims to present a preliminary analysis of the COVID-19 battle within the Jordanian context, as well as broad considerations and recommendations regarding the importance of coordinated efforts in crisis management. Abuhammad, (2022). This extensive national study looked at how pregnant women in Jordan felt about receiving the COVID-19 vaccine. According to this study, more than 50% of parents were reluctant to give their kids the COVID-19 vaccine. Regarding COVID-19 vaccination, there were no differences between pregnant and

nursing women. Khader, et al (2022) & Saad, et al (2022) . The immunization of children is a crucial intervention for their survival, particularly for refugees. However, in refugee camps, parents must manually register their children for vaccinations, and there is no way to remind them to return on time. the goal was to increase the number of parents who registered their children's vaccination records on the Children Immunization App (CIMA), as well as to provide parents with practical parenting techniques for when they are under stress from COVID-19 Mastana, (2023) & SN, (2022).

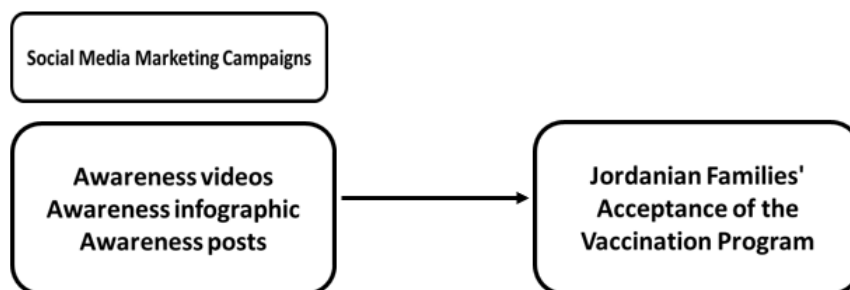
RESEARCH METHODOLOGY

Sample Data: The data sample for this study consists of Jordanian families, without regard to the number of individuals within each family. A total of 400 questionnaires were distributed, out of which 381 complete and usable questionnaires were collected.

Research Tool: To assess the level of acceptance of national vaccination programs among Jordanian families, a precise and scientifically sound questionnaire was developed and administered. The questionnaire was distributed electronically through social media platforms, targeting and accurately identifying individuals, particularly students. (Panchal & Kansara.2021).

Research Model

Figure: 1. Research Model



H1: There is a significant impact of awareness videos on social media on acceptance of the Vaccination Program.

H2: There is a significant impact of awareness infographic in social media on acceptance of the Vaccination Program.

H3: There is a significant impact of awareness posts in social media on acceptance of the Vaccination Program.

DATA ANALYSIS AND RESULTS

In this section, we present the empirical findings of the study, which were analyzed using statistical methods. We followed the recognized PLS-SEM reporting style suggested by prior studies (Chin, 2010). Before conducting the structural equation modeling procedures, we checked the data sets for multivariate assumptions to ensure their conformity. We then proceeded to assess the quality of the model.

Profile of Respondents

Table 5.1: Profile of respondents (N=381)

Variable	Category	Frequency	Percent (100%)
Gender	Male	210	55
	Female	171	45
Age	18-27	212	56
	28-37	101	26
	38-47	69	18
Educational Level	High school	203	53
	Diploma	88	23
	Bachelor	76	20
	Master	14	4

Multicollinearity Test

The researcher conducted two tests to check for multicollinearity between variables: the tolerance value and variance inflation factor (VIF). The SPSS version 25 was used for this purpose.

Based on the results of the multiple regression analysis presented in Table 4.8, the findings of this study indicated that the independent variable had a tolerance value of .890 and a variance inflation factor (VIF) value of 1.134. As the tolerance value was well above 0.10 and the VIF value was less than 10, it can be concluded that there was no issue of multicollinearity among the variables.

Table 5.2: Result of skewness and kurtosis for test of normality (N=381)

Variable	Collinearity Statistics	
	Tolerance	VIF
Social Media Marketing Campaigns	.860	1.125
Jordanian Families' Acceptance of the Vaccination Program	.860	1.125

Measurement Model Assessment

Internal Consistency Reliability

Construct validity refers to the extent to which a measure corresponds to the underlying theory or construct being measured (Sekaran, et al., 2013). In other words, it assesses whether the instrument actually measures what it is supposed to measure, as per the theoretical framework. To analyze construct validity, the measurement scales underwent three rigorous tests: content validity, convergent validity, and discriminant validity (Sekaran, et al., 2013). Content validity evaluates the degree to which the indicators or scale items adequately reflect the subject matter of the concepts being studied.

Table 5.3: Internal consistency reliability analysis

Dimension	Cronbach's Alpha	Composite Reliability	AVE
Social Media Marketing Campaigns	0.840	0.862	0.290
Awareness videos	0.900	0.920	0.786
Awareness infographic	0.913	0.930	0.706
Awareness posts	0.907	0.921	0.698
Jordanian Families' Acceptance of the Vaccination Program	0.840	0.869	0.701

Convergent Validity

Convergent validity, as per convention, requires factor loading, average variance extracted (AVE), and composite reliability to be met. According to Hair et al. (2019), factor loadings, composite reliability, and AVE are the three crucial indicators for convergent validity. Meeting satisfactory criteria for item loadings, AVE, and composite reliability determines convergence validity, which, in turn, establishes that items represent their respective constructs. AVE refers to the average variance shared by a construct and its measures. Generally, AVE values should be at least 0.5 (Hair et al., 2014). Table 5.4 shows the results of AVE, ranging from 0.696 to 0.842, indicating convergence validation across all constructs. Additionally, the table displays Cronbach's alpha, ranging from 0.851 to 0.902, and composite reliability, ranging from 0.903 to 0.927.

Discriminant Validity

To assess the discriminant validity of the study, an examination was conducted to compare the loading of indicators with the cross-loading of other variables. Results showed that all available indicators had higher loadings than cross-loading, indicating that discriminant validity was

met. In Table 5.4, correlations between latent constructs were compared to the square roots of the corresponding AVE values placed in diagonal cells to evaluate discriminant validity. The HTMT criterion was found to be below the 0.85 threshold, indicating satisfactory discriminant validity.

Table 5.4: Discriminant validity based on HTMT ratio of correlations

Heterotrait-Monotrait Ratio (HTMT)		
	Social Media Marketing Campaigns	Jordanian Families' Acceptance of the Vaccination Program
Social Media Marketing Campaigns		
Jordanian Families' Acceptance of the Vaccination Program	0.384	

Structural Model Assessment

R-Square (R^2)

The R^2 value represents the proportion of variance in the dependent variable that can be explained by the independent variables. In this study, the values were obtained using the SmartPLS algorithm, and t-statistics were generated using the SmartPLS bootstrapping function.

Table 5.5: R^2 values for the endogenous latent variables

Endogenous Variable	R^2	Predictive Relevance
Jordanian Families' Acceptance of the Vaccination Program	0.682	

Q-Square (Q^2)

The predictive quality of the model can be assessed by using a cross-validated redundancy measure obtained through the PLS blindfolding technique for all endogenous constructs. Generally, the cross-validated redundancy value should be greater than zero (Fornell & Cha, 1994) (A. Y. A. B. Ahmad, 2023), as presented in Table 5.6. The predictive quality of the model in this study is revealed through the blindfolding exercise conducted in SmartPLS, as shown in Table 5.6.

Table 5.6: The Q^2 values for the endogenous latent variables

Endogenous Variable	SSO	SSE	Q^2 (1-SSE/SSO)
Jordanian Families' Acceptance of the Vaccination Program	7590.000	7462.164	0.132

Effect Size (F^2)

To calculate the f^2 , the research study needs to estimate two PLS path models, one with the latent variable inclusion and one without it. The effect sizes can be interpreted as small, medium, and large effects, which are illustrated by values of 0.02, 0.15, and 0.35, respectively (Khan, Yasser, et al,2022) (Cohen, 1988). The predictive quality power of this research model can be assessed based on these effect sizes.

Table 5.7: Effect sizes (f^2) of the latent variables

Variable	Endogenous Variable	f^2	Effect Size Rating
Social Media Marketing Campaigns	Jordanian Families' Acceptance of the Vaccination Program	0.370	Large

Results of the Structural Model

Table 5.8 Results of Structural Model

No.	Hypotheses	Beta	SE	T-Value	P-Value	Decision
H1	AV → JFAVP	0.325	0.048	6.946	0.000	Supported***
H2	AI → JFAVP	0.258	0.051	5.300	0.000	Supported***
H3	AP → JFAVP	0.379	0.050	7.556	0.000	Supported***

***: $p < 0.001$; Two-tailed hypothesis; 5,000 bootstrap samples

(H1) was supported, indicating that awareness videos on social media have a significant impact on the acceptance of the Vaccination Program. Similarly

(H2) was supported, indicating that awareness infographics on social media have a significant impact on the acceptance of the Vaccination Program. Finally,

(H3) was also supported, indicating that awareness posts on social media have a significant impact on the acceptance of the Vaccination Program.

CONCLUSION

In this study, investigate the influence of social media marketing campaigns on the acceptance of the vaccination program approved by the Jordanian Ministry of Health among Jordanian families. Social media has become a vital tool for communication and information sharing, and it can be an effective channel to spread awareness about vaccination programs and increase acceptance rates. To achieve our research objective, we conducted a survey among a representative sample of Jordanian families. We designed a questionnaire that included questions about their demographic information, their awareness of the

vaccination program, their attitudes towards vaccination, and their exposure to social media marketing campaigns related to vaccination. The results showed that social media marketing campaigns have a significant impact on the acceptance of the vaccination program approved by the Jordanian Ministry of Health among Jordanian families. Specifically, our data analysis revealed that families who were exposed to social media marketing campaigns about vaccination were more likely to accept the vaccine than those who were not exposed to such campaigns. Furthermore, the findings indicated that the type of social media marketing campaign used has an impact on its effectiveness. Specifically, awareness videos and infographics were found to be more effective in increasing the acceptance of the vaccination program than awareness posts. This suggests that the use of visual aids in social media marketing campaigns can be more effective in communicating the importance and benefits of vaccination to the public. The study also found that demographic factors such as age, gender, and education level have an impact on the acceptance of the vaccination program. For instance, younger individuals and those with higher levels of education were found to be more likely to accept the vaccine than older individuals and those with lower levels of education. This suggests that targeted social media marketing campaigns that consider the demographic characteristics of the audience can be more effective in increasing the acceptance of vaccination programs. In conclusion, the study provides evidence that social media marketing campaigns can be an effective tool to increase the acceptance of vaccination programs among Jordanian families. The use of visual aids, such as videos and infographics, can be more effective in communicating the importance and benefits of vaccination. Targeted campaigns that consider the demographic characteristics of the audience can also be more effective in increasing acceptance rates. These findings can help policymakers and healthcare providers in Jordan to design and implement effective social media marketing campaigns that can increase the acceptance of the vaccination program among Jordanian families.

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