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Psychology

A PREFERENCE RANKING STUDY OF THE SOCIAL MEDIA APPS USED BY FEMALE PATIENTS UNDERGOING INFERTILITY TREATMENT

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INTRODUCTION:

Failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse is defined as infertility. Infertility has an impact on millions of affected families and communities[1]. Estimates suggest that approximately one in every six people of reproductive age worldwide experience infertility in their lifetime[2]. The most prevalent causes of infertility in the male reproductive system include aberrant sperm shape and motility, low or absent sperm counts, and issues with semen ejection.[3]. In the female reproductive system, infertility may be caused by a range of abnormalities of the ovaries, uterus, fallopian tubes, and the endocrine system, among others[4]. Infertility can be primary or secondary. A person is considered to be primarily infertile if they have never been pregnant, and secondarily infertile if they have at least one previous pregnancy. The prevention, diagnosis, and treatment of infertility are all included in fertility care[5]. Most nations still struggle to provide all women with equal access to reproductive care, especially those with low and middle incomes. Seldom does national universal health coverage prioritise fertility care.[6]. Research studies show that women's health apps do not appropriately address the needs of patients struggling with infertility and are of low quality with significant inaccuracies in content (Zwingerman et al., 2020)[7]. Hence fertility counsellors providing support need to design the content efficiently such that the app preferred by the patient can give optimal knowledge and emotional support ,thereby supplementing the course of the treatment. Development of such patient support tools should be a priority and the connect between the fertility counsellor and the patient should be enhanced through the use of the right app.

This study was conducted to study Preference ranking of the social media apps used by female patients undergoing infertility treatment.

MATERIALS & METHODS:

This was a cross-sectional single centric study conducted in the OPD of a tertiary care hospital wherein females between age of 25 to 45 years and undergoing infertility treatments were included in the study. Written informed consent was taken from all participants. AHP (Analytical Hierarchy Process) & PROMETHEE (Preference Ranking Organization METHod for Enrichment Evaluation) was used to rank the social media apps. PROMETHEE II was used for determining the order or priority in multicriteria analysis, which offers a flexible and simple way for users (decision makers) to analyze multi-criteria problems. The assessment criteria used to understand consumer preference while selecting a social media app are Efficiency of Communication (C1), Quality of Entertainment (C2), Privacy & Security (C3) and Transparency of Information (C4). Prior to that, we used AHP to calculate the appropriate weights for each of the alternatives, i.e., the social media apps namely, Instagram, WhatsApp, Facebook, Snapchat and Twitter. Data analysis was done by using computerised software. Qualitative data variables were expressed by using frequency and Percentage (%) and quantitative data variables were expressed by using Mean, Standard deviation. Chi-square test / Fisher's exact test were used to find the association between two qualitative data variables. p-value < 0.05 was considered as significant

RESULTS

Our study included 186 females of age groups 25 to 45 years who were undergoing treatment for infertility. Table 1 shows that WhatsApp was rated as excellent by maximum percentage of study population in terms of efficiency of communication, followed by Instagram & Twitter. Facebook was rated low by maximum responders. Instagram was rated excellent by maximum responders, followed by Twitter & Snapchat. Whatsapp was rated low by maximum responders [Table 2]. Instagram was rated as the most secure app, followed by Snapchat, Facebook had the lowest rating [Table 3]. WhatsApp & Twitter were the most transparent apps, while Facebook was the least, as rated by the responders [Table 4]. Table 5 shows the mean and standard deviation scores of various social media apps on various parameters. Then apps having minimum and maximum values were compared by t test and on all parameters, they were found to be statistically significant (p<0.05). On efficiency parameter comparing values of Whatsapp and Facebook t value was 14.12. Similarly on quality, privacy and transparency t values were 12.34, 8.4 and 5.8 respectively.

DISCUSSION:

The aim of this study was to explore the roles of social media for persons affected by infertility and the preference of these apps. The participants were female, which is in accordance with a previous study[8]. Male participants are generally more difficult to recruit to research studies[9] about reproductivity[10]. To our knowledge the present study is one of few studies that have used closed social media with focus on infertility to collect data. In our study, infertility was described by the participants as being fragmented as a person and being alienated from social life. In other words, social media may be used to process the emotional side of infertility, as stated by Malik and Coulson[11], rather than finding information about factual medical care. Barker's findings show that online social media groups can provide information that cannot be found anywhere else[12], because other forum members are in similar situations and have been through the experience of the disease. Only professional knowledge or information deemed necessary for the patient's care is disclosed by health professionals to their patients[13]. Applications, protocols, and tools like cookies and Internet protocol (IP) addresses can be used to identify individuals on Facebook. You can use this

information to identify and learn more about people[14]. Since many people view infertility as a delicate subject, some prospective participants declined to take part in the study out of concern for their privacy and a desire to remain anonymous. Online forums, according to Patel et al. (2015), may enhance the treatment of chronic illnesses by offering social and emotional support[15].

Van Empel et al[16] state that infertile persons experience shortcomings in fertility care regarding social support. According to the participants in this study, one of the main functions of infertile forums was to facilitate their ability to receive and provide assistance. Additionally, some participants reported that certain information provided in the forums was untrue. Members of the forum may not always be aware of each other's medical histories, thus the counsel and information offered may not always be sufficient. Moreover, because all participants were female, the results cannot be applied to men, who might have different experiences and support needs[17]. The findings are based on the participants' views at one point in time and the study was conducted in an Indian context and may therefore not be generalizable to other cultures. In the study, the option to block multiple responses from a single IP address was not used. Between-group comparisons were not made, because most of the answers were sent via Facebook and the other groups were small, making comparisons difficult.

Limitations

Our study had quite a few shortcomings, first of which was that it was a hospital-based study, consequently the findings cannot be generalized to the whole population.

Secondly the sample size was limited to 186, hence findings cannot be generalized to the whole population.

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Conflicts Of Interest
There are no conflicts of interest

Tables:
Table 1: Efficiency of Communication of various social media apps:

Social Media App (N=186)	1 (low)	2 (below average)	3 (average)	4 (good)	5 (excellent)
Instagram	6 (3.2%)	14 (7.5%)	52 (28%)	68 (36.6%)	46 (24.7%)
WhatsApp	3 (1.6%)	6 (3.2%)	23 (12.4%)	42 (22.6%)	112 (60.2%)
Facebook	30 (16.1%)	40 (21.5%)	62 (33.3%)	40 (21.5%)	14 (7.5%)
Snapchat	15 (8.1%)	37 (19.9%)	60 (32.3%)	45 (24.2%)	29 (15.6%)
Twitter	17 (9.1%)	28 (15.1%)	51 (27.4%)	44 (23.7%)	46 (24.7%)

Table 2: Quality of Entertainment of various social media apps:

Social Media App (N=186)	1 (low)	2 (below average)	3 (average)	4 (good)	5 (excellent)
Instagram	4 (2.2%)	17 (9.1%)	39 (21%)	60 (32.3%)	66 (35.5%)
WhatsApp	36 (19.1%)	56 (30.1%)	64 (34.4%)	19 (10.2%)	11 (5.9%)
Facebook	34 (18.3%)	36 (19.4%)	63 (33.9%)	35 (18.8%)	18 (9.7%)
Snapchat	24 (12.9%)	42 (22.6%)	59 (31.7%)	41 (22%)	20 (10.8%)
Twitter	10 (5.4%)	21 (11.3%)	53 (28.5%)	48 (25.8%)	54 (29%)

Table 3: Privacy & Security of various social media apps:

Social Media App (N=186)	1 (low)	2 (below average)	3 (average)	4 (good)	5 (excellent)
Instagram	22 (11.8%)	54 (29%)	65 (34.9%)	35 (18.8%)	10 (5.4%)
WhatsApp	9 (4.8%)	31 (16.7%)	55 (29.6%)	55 (29.6%)	36 (19.4%)
Facebook	41 (22%)	51 (27.4%)	65 (34.9%)	23 (12.4%)	6 (3.2%)
Snapchat	25 (13.4%)	33 (17.7%)	66 (35.5%)	31 (16.7%)	31 (16.7%)
Twitter	13 (7%)	35 (18.8%)	81 (43.5%)	39 (21%)	18 (9.7%)

Table 4: Transparency of Information of various social media apps:

Social Media App (N=186)	1 (low)	2 (below average)	3 (average)	4 (good)	5 (excellent)
Instagram	26 (14%)	49 (26.3%)	76 (40.9%)	29 (15.6%)	6 (3.2%)
WhatsApp	16 (8.6%)	34 (18.3%)	64 (34.4%)	46 (24.7%)	26 (14%)
Facebook	39 (21%)	47 (25.3%)	73 (39.2%)	20 (10.8%)	7 (3.8%)
Snapchat	24 (12.9%)	48 (25.8%)	65 (34.9%)	36 (19.4%)	13 (7%)
Twitter	16 (8.6%)	41 (22%)	72 (38.7%)	31 (16.7%)	26 (14%)

Table 5: Comparing various social media apps on different parameters:

Parameter (N=186)	Instagram	WhatsApp	Facebook	Snapchat	Twitter
Efficiency of Communication	3.72 ± 1.02	4.37 ± 0.93	2.83 ± 1.16	3.19 ± 1.16	3.40 ± 1.26
Quality of Entertainment	3.90 ± 1.05	2.53 ± 1.09	2.82 ± 1.21	2.95 ± 1.18	3.62 ± 1.17
Privacy & Security	2.77 ± 1.05	3.42 ± 1.12	2.47 ± 1.06	3.05 ± 1.24	3.08 ± 1.03
Transparency of Information	2.68 ± 1.0	3.17 ± 1.14	2.51 ± 1.05	2.82 ± 1.10	3.05 ± 1.13

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