RESEARCH ARTICLE

SOCIAL MEDIA AND DEPRESSIVE EPISODES.

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Introduction and Aim: Due to the increase involvement of social media in our daily activity, we conducted a survey to see the correlation between social media use and development of depression.

Design of survey: A Questioner paper was filled by randomly selected individuals. Data was collected with a total number of 283 subject and was analyzed using SPSS software program.

Results: According to our results, (45%) of the subjects (n=258) met the criteria of a depressive episode due to social media use. The data shows that there is no significant correlation between development of a depressive episode due to social media use and the other variables, except awareness, where there is a significant p value (p =0.04) and a negative r value (r = -0.128).

Conclusion: We conclude that there is a link between development on a depressive episode from usage of social media and awareness, which signifies the importance of spreading public awareness on social media effect on psychological health.

Introduction: -

In our time, the social media and social networking (Facebook, Twitter…etc.) is becoming a part of our daily life, so one can imagine the consequences of this increase in social media use on the psychological wellbeing of an individual. In our research, we conducted a survey to see the correlation between social media use and the development of a depressive episode. Our results were significant and show a strong link between social media and depressive episodes reflecting the magnitude of the issue and the need for a deeper and more sophisticated study to reach a solution.

Social media are internet-based application that allows people to communicate, socialize, and share personal information in virtual communities and networks.

According to the KSA Social Clinic in Jeddah, in 2013, it is estimated that 8.4 million of the Saudi population are active Facebook users, 26% are female and 74% are male, and most are in the age group between 18 to 34 years old, it is also estimated that there is currently 5 million active twitter account with a rate of increase by 45% per year in new accounts, these statistics reflect the magnitude of social media usage among the Saudi population.
In 2013, according to the journal of Adolescent health, a paper published by Lauren A. Jelenchick titled “Facebook depression? Social networking site use and depression in older adolescent” concluded that there were no evidence supporting a relationship between social networking and clinical depression.

It was noted that in the past 5 years many news articles emerged discussing the psychological impact of social media on the young population as Facebook blues, envy and depression, cyber bulling …etc. This lead to the idea of conducting a survey that would target social media users and its correlation with development of depressive episodes based on ICD-10 criteria.

**Design of survey:**
On December 2013, University of Dammam organized a public exhibition in Othaim mall in Dammam, Saudi Arabia, Which focused on social media impact on the community, it had many corners each tackling a specific subject. Ours was focused on the physical complications of prolonged use of personal computers (backache, carpal tunnel syndrome…etc). We prepared a questionnaire form that would be filled at the end of the tour. After filling the questionnaire, the individual would place it directly in a sealed box to assure privacy and avoid any social embarrassments. The tour would discuss physical complications and at the end of the tour one of the investigators would explain in details the survey and its contents to avoid any misunderstandings, and to emphasizes on that these answeres should be related to social media use specifically, then the individual would be left to fill the form privately and help would be provided upon request. The exhibition lasted 3 days, and at the end of the exhibition a total of (n=283) forms were collected. After data collection, the program Statistical Package for the Social Sciences (SPSS) was used for data entry and analysis.

Human subjects were randomly selected, not targeted individuals whom attended the exhibition.

The form was a patient health questionnaire (phq-9)* relying on ICD-10 interpretation. It was translated to Arabic and back to English by different investigator to ensure accuracy. It had multiple variables that would add extra information with statistical benefits that could be used in different hypotheses.

Inclusive criteria are: any subject, who went on the tour, was explained the form in details with full understanding, completed the questionnaire, and placed it inside the box.
Exclusive criteria are: any subject, who didn’t go on the tour, didn’t have complete understanding of the form, didn’t complete the questionnaire, had been diagnosed clinically with any significant mental disorder, and didn’t place the form inside the box.

Our variables in the form were as followed:-

Age:-
Ages of the subjects were grouped based on developmental stages, a group of 9 to 15 represented pubescent group and coming to age group, a group of 16 to 19 represented an adolescence group, a group of 20 to 27 represents young adults whom are in the age of marriage, a group of 28 to 35 represents adults whom are usually married with children, finally a group of over 35 whom represented an older generation.

Gender:-
Male and female.

Number of applications used (Twitter, Facebook, Path, Chatting applications… etc.)
They were grouped to 2-3, 4-8, or 8 and above.
Actual average daily use:-
How many hours were spent using these applications specifically, answers were grouped to one to two hours, two to four hours, or over four hours.

Number of close friends online:-
How many actual close friends do you have online that you are in touch with, they were grouped to 1-2 friends, 2-6 friends, or over 6 friends.

Do you think that online social media (e.g. Facebook, twitter, path, online forums, chat rooms...etc.) have a direct effect on the psychological health of an individual?

A direct question which aimed to evaluate awareness and see personal opinions on the matter, answers were either yes or no.

Afterwards the patient health questionnaire (PHQ9) was used, based on criteria from ICD-10, 4 out of 9 questions answered with yes makes the diagnosis of a depressive episode positive. Some questions were added to avoid random selections, those don’t have any significance and are not taken in consideration.

Finally there was a table to screen if the patient had been diagnosed clinically with any significant mental disorder, subjects who answers any of them positively is excluded from the study.

Results:-
Number of subjects excluded from the study because they had been diagnosed clinically with a significant mental disorder(n=25) representing 8.8%.

| Mental Patient | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------|-----------|---------|---------------|--------------------|
| Valid          | Eligible  | 258     | 91.2          | 91.2               |
|                | Out       | 25      | 8.8           | 100.0              |
|                | Total     | 283     | 100.0         | 100.0              |

Crosstab between age of subjects and number of hours used.

| Age * Average daily use Crosstabulation | Average daily use | Total |
|-----------------------------------------|-------------------|-------|
|                                         | 1 - 2 hours | 2 - 4 hours | Over 4 hours |
| Age 9 - 15                              | Count         |          |            |
| % within Age                            | 52.9%        | 23.5%    | 23.5%      |
| % within Average daily use              | 11.5%        | 5.6%     | 3.7%       |
| Age 16 - 19                             | Count         |          |            |
| % within Age                            | 10.9%        | 30.4%    | 58.7%      |
| % within Average daily use              | 6.4%         | 19.4%    | 25.0%      |
| Age 20 - 27                             | Count         |          |            |
| % within Age                            | 23.1%        | 30.8%    | 46.2%      |
| % within Average daily use              | 34.6%        | 50.0%    | 50.0%      |
| Age 28 - 35                             | Count         |          |            |
| % within Age                            | 38.3%        | 25.5%    | 36.2%      |
| % within Average daily use              | 23.1%        | 16.7%    | 15.7%      |
| Age 36 and older                        | Count         |          |            |
| % within Age                            | 61.3%        | 19.4%    | 19.4%      |
| % within Average daily use              | 24.4%        | 8.3%     | 5.6%       |
| Total                                   | Count         |          |            |
| % within Age                            | 30.2%        | 27.9%    | 41.9%      |
| % within Average daily use              | 100.0%       | 100.0%   | 100.0%     |
Frequency of gender:

| Gender | Frequency | Valid Percent |
|--------|-----------|---------------|
| Male   | 101       | 39.1          |
| Female | 157       | 60.9          |
| Total  | 258       | 100.0         |

Awareness:

Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual?

| Valid | Frequency | Valid Percent | Cumulative Percent |
|-------|-----------|---------------|--------------------|
| Yes   | 208       | 80.6          | 80.6               |
| No    | 50        | 19.4          | 100.0              |
| Total | 258       | 100.0         |                    |
### Number of applications used:

| Number of apps used | Frequency | Valid Percent |
|---------------------|-----------|---------------|
| Valid               |           |               |
| 2 - 3               | 81        | 31.4          |
| 4 - 8               | 105       | 40.7          |
| Over 8              | 72        | 27.9          |
| Total               | 258       | 100.0         |

### Number of close online friends:

| Number of online close friends | Frequency | Valid Percent |
|--------------------------------|-----------|---------------|
| Valid                          |           |               |
| 1 - 2                          | 23        | 8.9           |
| 3 - 6                          | 54        | 20.9          |
| More than 6                    | 181       | 70.2          |
| Total                          | 258       | 100.0         |

### Percentage of subjects which met the criteria of a depressive episode:

| Depressive episode | Frequency | Valid Percent |
|--------------------|-----------|---------------|
| Valid              |           |               |
| Negative           | 142       | 55.0          |
| Positive           | 116       | 45.0          |
| Total              | 258       | 100.0         |
### Crosstabulation between age group and depressive episode:

| Age       | Count | Depressive episode | Total  |
|-----------|-------|--------------------|--------|
|           |       | Negative | Positive |        |
| 9 - 15    | 11    | 6        | 17      |
| % within Age | 64.7% | 35.3%    | 100.0%  |
| % within Depressive episode | 7.7% | 5.2%     | 6.6%    |
| 16 - 19   | 23    | 23       | 46      |
| % within Age | 50.0% | 50.0%    | 100.0%  |
| % within Depressive episode | 16.2% | 19.8%    | 17.8%   |
| 20 - 27   | 66    | 51       | 117     |
| % within Age | 56.4% | 43.6%    | 100.0%  |
| % within Depressive episode | 46.5% | 44.0%    | 45.3%   |
| 28 - 35   | 24    | 23       | 47      |
| % within Age | 51.1% | 48.9%    | 100.0%  |
| % within Depressive episode | 16.9% | 19.8%    | 18.2%   |
| 36 and older | 18    | 13       | 31      |
| % within Age | 58.1% | 41.9%    | 100.0%  |
| % within Depressive episode | 12.7% | 11.2%    | 12.0%   |
| Total     | 142   | 116      | 258     |
| % within Age | 55.0% | 45.0%    | 100.0%  |
| % within Depressive episode | 100.0% | 100.0%   | 100.0%  |
### Crosstabulation between average daily use and depression:

| Average daily use | Depressive episode | Total |
|-------------------|---------------------|-------|
|                   | Negative | Positive |       |
| 1 - 2 hours       | Count | 48 | 30 | 78 |
| % within Average daily use | 61.5% | 38.5% | 100.0% |
| % within Depressive episode | 33.8% | 25.9% | 30.2% |
| 2 - 4 hours       | Count | 37 | 35 | 72 |
| % within Average daily use | 51.4% | 48.6% | 100.0% |
| % within Depressive episode | 26.1% | 30.2% | 27.9% |
| Over 4 hours      | Count | 57 | 51 | 108 |
| % within Average daily use | 52.8% | 47.2% | 100.0% |
| % within Depressive episode | 40.1% | 44.0% | 41.9% |
| Total             | Count | 142 | 116 | 258 |
| % within Average daily use | 55.0% | 45.0% | 100.0% |
| % within Depressive episode | 100.0% | 100.0% | 100.0% |

### Crosstabulation between number of applications and depressive episodes:

| Number of apps used | Depressive episode | Total |
|---------------------|---------------------|-------|
|                    | Negative | Positive |       |
| 2 - 3              | Count | 39 | 42 | 81 |
| % within Number of apps used | 48.1% | 51.9% | 100.0% |
| % within Depressive episode | 27.5% | 36.2% | 31.4% |
| 4 - 8              | Count | 64 | 41 | 105 |
| % within Number of apps used | 61.0% | 39.0% | 100.0% |
| % within Depressive episode | 45.1% | 35.3% | 40.7% |
| Over 8             | Count | 39 | 33 | 72 |
| % within Number of apps used | 54.2% | 45.8% | 100.0% |
| % within Depressive episode | 27.5% | 28.4% | 27.9% |
| Total              | Count | 142 | 116 | 258 |
| % within Number of apps used | 55.0% | 45.0% | 100.0% |
| % within Depressive episode | 100.0% | 100.0% | 100.0% |

### Crosstabulation between awareness and opinion with depressive episodes:

| Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual? | Depressive episode | Total |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-------|
|                                                                                                                                | Negative | Positive |       |
| Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual? | Count | 108 | 100 | 208 |
| % within Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual? | % within Depressive episode | 51.9% | 48.1% | 100.0% |
| % within Depressive episode | 76.1% | 86.2% | 80.6% |
| No                              | Count | 34 | 16 | 50 |
% within Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual?

| % within Depressive episode | 68.0% | 32.0% | 100.0% |

% within Depressive episode

| Count | 142 | 116 | 258 |

Total

% within Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual?

| % within Depressive episode | 100.0% | 100.0% | 100.0% |

**Correlation coefficient between depressive episodes and other variables:-**

| Correlation coefficient | Depressive episode |
|-------------------------|------------------|
| Spearman's rho          |                  |
| Depressive episode      | Correlation Coefficient | 1.000 |
|                        | Sig. (2-tailed) | . |
|                        | N               | 258 |
| Age                    | Correlation Coefficient | .004 |
|                        | Sig. (2-tailed) | .949 |
|                        | N               | 258 |
| Gender                 | Correlation Coefficient | .102 |
|                        | Sig. (2-tailed) | .101 |
|                        | N               | 258 |
| Number of apps used    | Correlation Coefficient | -.052 |
|                        | Sig. (2-tailed) | .408 |
|                        | N               | 258 |
| Average daily use      | Correlation Coefficient | .067 |
|                        | Sig. (2-tailed) | .284 |
|                        | N               | 258 |
| Number of online close friends | Correlation Coefficient | -.050 |
|                        | Sig. (2-tailed) | .424 |
|                        | N               | 258 |
| Do you think that online social media (e.g. Facebook, twitter, path, online forums, chatrooms, ...etc) have a direct effect on the psychological health of an individual? | Correlation Coefficient | -.128 |
|                        | Sig. (2-tailed) | .040 |
|                        | N               | 258 |

**Discussion:-**

Our data shows that subjects age 20 – 27 represent the majority (45.3%) of social media users, with (46.2%) of them spending an average of over 4 hours on it, bearing in mind that most of our subjects (n=117) are of this age group.

Our data also shows that awareness of development of a depressive episodedue to social media usage is at (80.62%).

Finally according to our results, (45%) of the subjects (n=258) met the criteria of a depressive episode due to social media use which signifies the magnitude of social media impact on the psychological wellbeing of an individual.
The data shows that there is no significant correlation between development of a depressive episode due to social media use and the other variables, except awareness, where there is a significant p value (p =0.04) and a negative r value (r = -0.128), which indicates that there is a weak significant negative correlation between development of a depressive episode due to social media use and awareness, concluding that individuals with awareness has a lesser chance of development of a depressive episode due to social media. Otherwise the issue doesn’t rely on age, gender, number of hours spent on social media, number of close friends, and number of applications.

**Conclusion:-**
We conclude that there is a link between development on a depressive episode from usage of social media and awareness, which signifies the importance of spreading public awareness on social media effect on psychological health.

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