

THE ROLE OF PHOTOS IN SOCIAL MEDIA INTERACTIONS OF ADULT ARABS WITH AUTISM SPECTRUM DISORDER

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Abstract

People with autism spectrum disorder (ASD) face difficulties in everyday life with their communication and interaction skills. Due to preferences for visual stimuli, photos have been used to support communication and to teach interaction and social skills. In Arab countries, adults on the autism spectrum experience the same difficulties in addition to dealing with other issues, such as stigma within society, a lack of services, cultural rules and the inability to sufficiently benefit from existing technologies designed according to the culture and language of Western countries. Previous studies have shown that social networks could be used by adults with ASD to help them build connections and overcome their difficulties with social skills. However, the benefits of social networks have been largely absent in the lives of Arab adults with ASD. This study focuses on the use of Facebook by Arab adults with ASD and the role of photos on their communication and interactions; the help of family and friends for preventing online vulnerability issues is taken into consideration. The study also focuses on the cultural aspects that could have an impact on the use of social networks by adult Arabs with ASD.

Keywords: Social Media, Technology, Accessibility, Usability, Communication, Social Skills, Photos, Arabs, Autism.

1 INTRODUCTION

Autism spectrum disorder (ASD) is a lifelong developmental disability. People with ASD face potential difficulties with social communication and interaction and restricted repetitive patterns of behaviour, interests or activities [1]. A high number of adults with ASD face problems in face-to-face communications and may try to avoid social interaction and group activities [2], [3]. In the past few years, technology has been developed and research has been undertaken focusing on managing social skills difficulties and improving the lives of people with ASD [4]. Social media networks, such as Facebook, have also been used for improving social and communication skills of people with ASD [5].

Support services may be difficult to obtain for adults with high-functioning autism (HFA) or Asperger syndrome [6], [7] who, nevertheless, may still require support [3]. However, most autism intervention research has involved young children in Western cultures [8], [9], and only a small number of research projects have been conducted on the use of technology by adults. In Arab countries, less research has been carried out regarding ASD [10], and research focusing on the use of technology for people with ASD is not widely studied. It has also been claimed that families across the Middle East are ashamed of the disability and try to hide their children from the community [11]. These issues demonstrate the importance of implementing a study considering the use of technology for adult Arabs with ASD to help them overcome some of their challenges and to provide them with a better quality of life.

The focus of this research is the influence of photos shared with family and friends on social media networks on the communication and interaction skills of adults from Arab countries with high-functioning autism or Asperger syndrome. Facebook has been chosen for its popularity and useful features. For example, photos represent about 93% of the most engaging posts on Facebook [12]. Additionally, it has been reported that people with ASD are interested in images more than text [13], [14]. However, people with ASD may be vulnerable to bullying and abuse when using technology [15]. Benford focused on technologies used by people with ASD and how integrating family support can reduce these vulnerabilities [15].

Conversations, activities and the engagement of adult Arabs with ASD using photos on Facebook will be studied. The use of social media by adult Arabs could be limited by cultural restrictions, which they also face in the real world. In order to help Arabs with ASD benefit from using social networks, a number of cultural factors that could influence their usability and sociability have been identified. These factors provide a Framework for Autistic Arabs' Social Communication and Interaction Technology (FAASCIT) that is based on background studies and cultural knowledge in addition to consultation with autism professionals and individuals in Saudi Arabia (Table 1). The current stage of

the study will explore some of the factors by observing the use of Facebook by adult Arabs with ASD and how photo sharing might make the use of social media more suitable and beneficial for this group of users. The study aimed to include ten autistic adults and their families who would be observed in a series of sessions; however, only seven participants were eligible to participate. This paper will present FAASCIT as well as the design of the observational study.

2 A FRAMEWORK FOR AUTISTIC ARABS' SOCIAL COMMUNICATION AND INTERACTION TECHNOLOGY (FAASCIT)

A number of cultural factors have been identified. The main objective was to focus on the cultural aspects that could affect the use of social media networks by Arab users. Factors were identified based on the literature and background information in addition to the support of experts in the field of autism in Saudi Arabia. These cultural issues may not only affect the use of social media by Arabs with ASD but also the use by non-autistic Arabs. For example, a study by Askool [16] explored and investigated the impact of cultural restrictions on the use of Facebook by users in Saudi Arabia. However, in the current research, the focus is Arab adults with ASD and how to support them to gain benefits from social networks. Overcoming their difficulties and coping with cultural issues could be the key that will support their use of social media, improve their communication and social interaction and provide a better quality of life.

Table 1. Framework for Autistic Arabs' Social Communication and Interaction Technology (FAASCIT)

Language English technologies with English icons, symbols and platform could be difficult to use for some users, especially for Arabs as Arabic is a completely different language; it is also a right-to-left language.	[17]
Lifestyle system Technologies could be culturally biased to Western lifestyle and systems and hard to be adapted by those of other cultures.	[18]
Internet language Technology icons, abbreviations in social networks (such as LOL, OMG) and understanding the meanings of social media terminology (such as wall and tag) may not be understood by everyone.	[19] [20]
Arabizi The use of the Latin alphabet for writing Arabic is very popular in social networks, but not all people understand it.	[21]
Gender differences Different genders may react and use technology differently.	[10]
Different age groups The use of social media technologies may be different between different age groups as a result of understanding the Internet and having digital media literacy.	[22] [23]
Photos Photos could be a big issue for some people in Arab countries as the display of a personal photo online to be viewed by the public, especially for females, may be prohibited or not accepted.	[17]
Personal information Within the culture of a few groups, there is a stigma attached to the names of female relatives being used; these people use pseudonyms or initials instead of their real names.	[24]
Communicating with the opposite gender Communication and interaction between unrelated males and females is restricted in some Arab countries.	[17] [25]
Privacy Applying privacy settings with respect to what people can view can be different among cultures.	[17]
Conservatism Many people in Arab countries are conservative in regards to disabilities.	[26]

Autonomy Individuals rely more on the family in most Arab countries as it is not common to move out of the parents' house at a certain age.	[27]
Relationships In some Arab countries, relationships and dating are not allowed.	[28]
Music Some people believe that music is forbidden. Including music in the technology could pose a problem for them.	[29]
Internet access Some countries or different areas in the same country might have less, expensive or no access to the Internet, which could result in the unavailability of the Internet for all people in these countries. Also, local areas, such as universities, may not all provide Internet access.	[17] [23] [30]

These identified factors are examined during the implementation of this study to support the final version of the framework. The Framework can be extended, modified and supported by including the opinion of the diagnosed participants when interviewing and observing them while completing certain arranged tasks.

3 RESEARCH DESCRIPTION

Support services for people with ASD in most Arab countries are limited. This is especially true for persons who are high-functioning or who are diagnosed with Asperger syndrome and who are over the age of 16 years. Most autism centres in Saudi Arabia stop accepting individuals older than 16 years regardless of whether they still require support. As the study is implemented in Saudi Arabia, the aim was to focus on this group as the target participants, but there is little information about this group in the literature.

The use of technology has had a sufficient impact on the lives of people with ASD in Western countries [4]. In [3] it has been claimed by Burke et al. that the use of computer-mediated communication (CMC), such as emails, blogs, online social networks and text messaging, for social support is an ideal method for individuals with ASD because it provides the user with some control over the conversation as well as more processing time. Among the many available social media networks, Facebook is the most popular, with 71% of online adult users [31]. Facebook, Twitter, YouTube and LinkedIn are frequently used in Saudi Arabia, with more than seven million Facebook users in 2013 [32]. In addition, Facebook has an Arabic interface that is considered to facilitate its use [23], [32], [33]. Facebook allows users to share their thoughts on their status and post photos, Web links or videos on their pages and to make them public to their friends or to post them through a private messaging system or instant messaging. It also allows users to 'tag', 'like', comment and interact and communicate by having discussions about certain uploaded images. As this research focuses on the use of social media and photos specifically, the role of photos to motivate ASD users will be observed along with the exploration of the impact of the mentioned factors on the use of photos disseminated using Facebook and the communication of the users with family and friends over the photos.

4 METHODOLOGY

In the first stage of this research, 12 experts in the field of autism were interviewed from different autism centres in Saudi Arabia along with three adults on the autism spectrum. The aim of the interviews was to gain an overview on the status of autism in Saudi Arabia before initiating the study and to explore the relevance and appropriateness of the FAASCIT. The initial interviews confirmed that there are limited services for people with ASD in Saudi Arabia, especially adults, and there is a lack of technologies for Arabs with ASD [34]. The initial process also highlighted that finding high-functioning adults to participate in the study is difficult, so the alternative plan was to include participants from other Arab countries in addition to Saudi Arabia. However, the final participant group included only Saudi participants, as discussed in the following section.

4.1 Finding participants

Finding the appropriate participants for the study was challenging, and there were some difficulties when communicating with them. The status of ASD in Arab countries is different from that in Western

countries. It is difficult to find adults with high-functioning autism or Asperger syndrome for several reasons, including denial by their families of their disability and hiding them from the community out of shame [35]. It is also likely that some cases are undiagnosed [35]. In addition, people are more private when it comes to a sensitive subject, such as a disability, and are less likely to respond.

The process for recruiting participants was as follows: An online survey was distributed for about three months to Arab autism groups and autistic individuals by using Twitter, Facebook and Whatsapp. The survey was also sent to experts from autistic centres in Saudi Arabia, Kuwait and the UAE by text messages and emails. The survey was to be completed by the caregiver of the person with ASD in order to obtain permission from the family to contact the person with ASD; however, the participants with ASD have to sign their own consent to agree to participate. The online survey was not exclusive to one Arab country, and participation from different countries was encouraged. Unfortunately, only people from Saudi Arabia responded since the main aspect for recruiting participants appeared to depend on personal contact. After the completion period of the survey, there had been 2920 attempts to look at the survey, but the number of completed forms was only 28; of these one was not answered, and one was duplicated, leaving 26 caregivers completing the survey. All forms were completed online except one, which was completed manually by printing the survey and handing it to the parent. From the 26 forms, only 13 caregivers agreed to participate in the study, but only seven (all male) of the people with ASD were eligible to be included in the study. The other six were excluded for being under age or for missing contact details.

4.2 Observational Study

The objective of this research study is to help adults with ASD in Arab countries use various photo-sharing techniques in social media in order to help support their social and communication skills. By uploading photos in different situations, initiating a conversation could be easier for people with ASD [36]. This study will focus on the usability, accessibility and sociability of Facebook for adult Arabs diagnosed with ASD via photo sharing. Users may not be motivated to like or comment on any photo unless it attracts their interest and attention and provides a reason for carrying out an action. The purpose of focusing on photos is because people with ASD are more interested in photos and images rather than text [13], [14]. This study will require the help of the caregiver for communicating with the participant and for collecting some general information about the participant before starting the study. None of the participants who agreed and who are applicable to participate have a Facebook account; therefore, the first step is to ask the caregivers to create an account. By creating an account, the factors identified in the Framework shown in Table 1 will be explored through some features as presented in Table 2.

Table 2. A brief example of exploring the impact of FAASCIT on the use of Facebook by adult Arabs with ASD

Observational Features	Explanation	Factors Explored
Setting an account	The availability and usefulness of creating a Facebook account	Internet access Different age groups Internet language Language
Privacy settings	The visibility of information (profile photo, personal information, education, location, photos, friends list, etc.) by different user groups (friends, public, special friends)	Internet language Personal information Photos Privacy Conservatism
Account Name	Is the account name of the participant his/her real name, part of it, or a nickname? The written language of the name	Personal information Gender differences Language Arabizi

Profile photo	The type of profile photo the participant is displaying	Gender differences Photos Conservatism
Number of friends	The number of users the participant has in his/her friend list and who are these friends	Gender differences Communicating with the opposite gender Conservatism Autonomy Relationships
First activity	When was the first activity done by the participant after creating the account	Internet language Internet access

The next step is to request each participant to implement a number of photo-related tasks with the help of the caregiver and to observe the participants' use of Facebook for a period of three weeks. An example of a photo-related task is asking the caregiver to post a family photo on the participant's wall or tag the participant in a photo. The impact of FAASCIT will be explored during the observational phase and until the end of the study. Privacy issues of Facebook will be taken into consideration, and the caregiver will be involved if the privacy settings are private. From the completed surveys, 22 of the caregivers said that people with ASD should be monitored when using Facebook. As the participants in this study are all new to Facebook, users could be vulnerable to online bullying; consequently, for their safety, their family will also be involved. After observing their online actions on Facebook, participants will be interviewed in person for further exploration. Other tasks will also be observed, such as uploading photos of interest and contributing in a 'photo quiz'. The idea behind this is to motivate the participants to interact with others by asking questions about photos, which could interest them. The 'photo quiz' will be available only to family and close friends chosen by the caregivers for privacy reasons and will help in evaluating and observing the motivation of the participants and their interactions with others. In addition, the cultural issues that may have an impact on their online communication will be considered.

5 CONCLUSIONS AND FUTURE PLANS

This paper highlights the lack of research in the field of ASD in Arab countries, especially regarding the use of technology for supporting adults with high-functioning autism or Asperger syndrome. Adults on the spectrum receive less attention, and facing difficulties in communication puts them in awkward situations that could affect their social lives. It has been shown that in Western countries technology has a significant impact on the lives of people with ASD, and various studies have considered using social networks for improving the social and communication skills of people with ASD. As communicating by using photos is more useful and enjoyable for people with ASD than using text, this study focuses on exploring and observing the interactions of people with ASD and photos disseminated on Facebook with the help of family and friends and investigating the role of photos on the motivation of the user to interact and communicate. However, the Arab culture and traditions raise issues for Arab users when using social networks. This research identified various cultural factors that could affect the usability and accessibility of social networks for Arab users. It focuses on adults with ASD by designing the FAASCIT. Further investigations and interviews are needed to achieve the goal of enabling adult Arab users with ASD to use technology more easily in a way that accommodates their own cultural context and helps them use social networks effectively with improved communication and socialising skills.

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