

Preliminary development of the social media disinformation scale (SMDS-12) and its association with social media addiction and mental health: COVID-19 as a pilot case study

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Abstract

Background: In recent years, online disinformation has increased. An infodemic has spread around the COVID-19 pandemic. Since January 2020, the culprits and antidotes to disinformation have been digital and social media.

Objective: Our study aimed to develop and test the psychometric properties of the SMDS-12 measurement scale which assesses the consumption, confidence, and sharing of information related to covid-19 by social media users.

Methods: A total of 874 subjects recruited over two exploratory (n = 179, Mean age = 29.34, SD = 7.98) and confirmatory (n = 695, Mean age = 31.22, SD = 11.63) periods, completed the social media disinformation scale (SMDS-12), the Internet addiction test (IAT), the COVID-19 fear scale, and the perceived stress questionnaire. The 12-item scale (SMDS-12) was initially tested by exploratory factor analysis.

Results: The test supported the three-dimensional structure, in addition, no items were removed from the measurement scale. Subsequently, confirmatory factor analysis confirmed the robustness of the measure by referring to a wide range of goodness-of-fit indices that met the recommended standards. The reliability of the instrument examined by means of three internal consistency indices demonstrated that the three dimensions of the instrument are reliable. The correlation between the instrument's dimensions with the internet addiction scale and mental health factors showed positive associations.

Conclusions: The scale is eligible for measuring the credibility of disinformation and can be adapted to measure the credibility of social media disinformation in other contexts.

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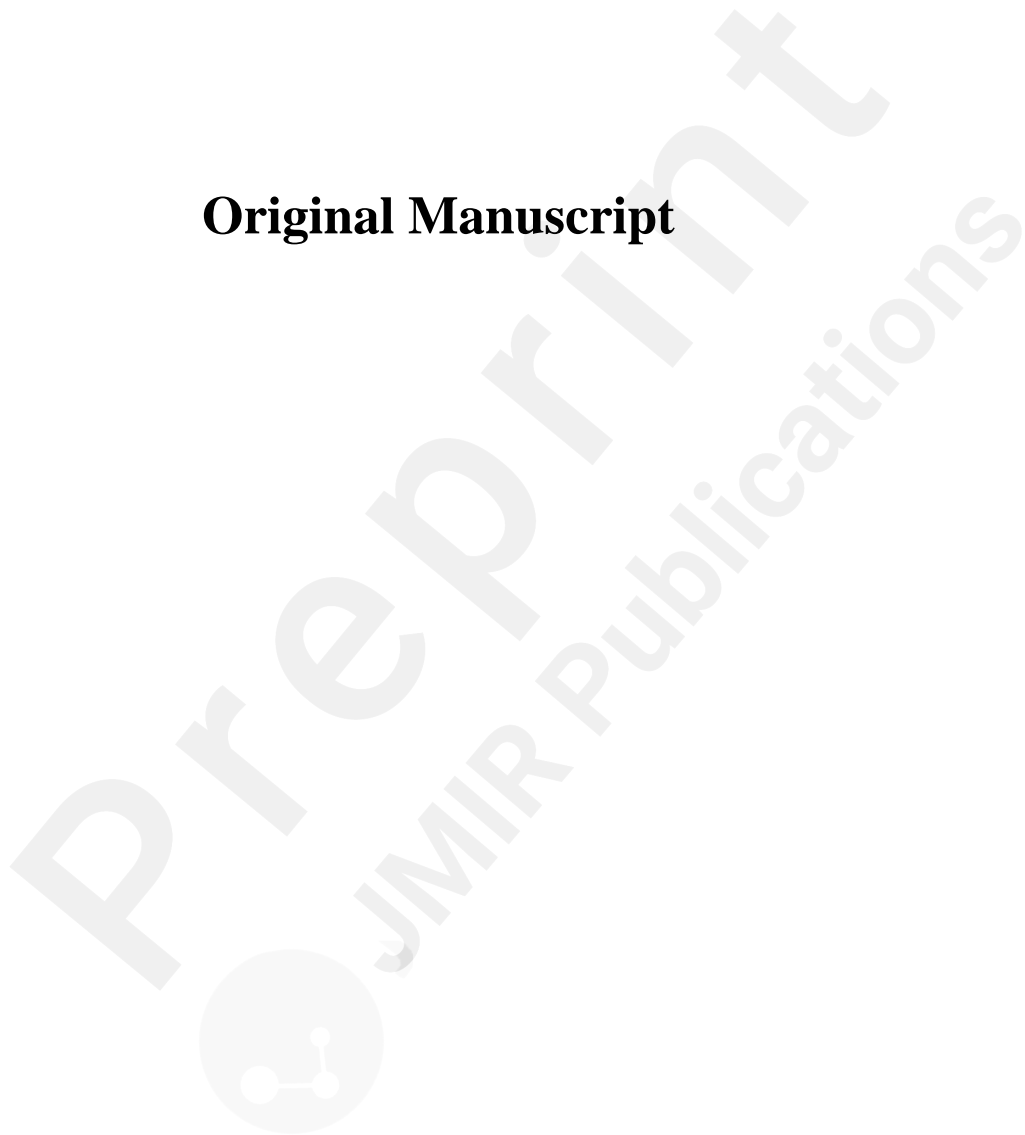
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Preliminary development of the social media disinformation scale (SMDS-12) and its association with social media addiction and mental health: COVID-19 as a pilot case study

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Abstract:

Background: In recent years, online disinformation has increased. An infodemic has spread around the COVID-19 pandemic. Since January 2020, the culprits and antidotes to disinformation have been digital and social media. **Aims:** Our study aimed to develop and test the psychometric properties of

the SMDS-12 measurement scale which assesses the consumption, confidence, and sharing of information related to covid-19 by social media users. **Methods:** A total of 874 subjects recruited over two exploratory (n = 179, Mean age = 29.34, SD = 7.98) and confirmatory (n = 695, Mean age = 31.22, SD = 11.63) periods, completed the social media disinformation scale (SMDS-12), the Internet addiction test (IAT), the COVID-19 fear scale, and the perceived stress questionnaire. The 12-item scale (SMDS-12) was initially tested by exploratory factor analysis. **Results:** The test supported the three-dimensional structure, in addition, no items were removed from the measurement scale. Subsequently, confirmatory factor analysis confirmed the robustness of the measure by referring to a wide range of goodness-of-fit indices that met the recommended standards. The reliability of the instrument examined by means of three internal consistency indices demonstrated that the three dimensions of the instrument are reliable. The correlation between the instrument's dimensions with the internet addiction scale and mental health factors showed positive associations. **Conclusion:** The scale is eligible for measuring the credibility of disinformation and can be adapted to measure the credibility of social media disinformation in other contexts.

Keywords: COVID-19 Pandemic, Media Disinformation, Social Media Addiction, Mental Health, Scale Validation

I. Introduction

During the COVID19 pandemic, people around the world have leaned towards an excessive use of social media, on the one hand, because it lowers their feelings of loneliness, and on the other hand, because the use of social media provides them with information on the state of emergency in their countries and around the world.

Indeed, this pandemic is characterized by a high potential for contagion, a lack of vaccines, an absence of drugs and an exponential spread which has upset people's lifestyles and leads to a feeling of insecurity (Molteni et al., 2020; Wilson et al., 2020), fear (Shah et al., 2020) and even community

panics in several populations (Zheng, Luo, & Ritchie, 2021; Malte et al., 2020; Nicomedes, & Avila, 2020; Islam, Ferdous, & Potenza, 2020; Saurabh, & Ranjan, 2020).

Almost everyone is interested in hearing current information about the pandemic, vaccines, and anything related to COVID-19. This is because during the pandemic, in addition to seeing its usual activities restricted, people are exposed to a wide range of excessive information from various sources, including official messages, as well as (erroneous) informations from a range of less reliable sources (Usher et al., 2020; Yang, Torres-Lugo and Menczer, 2020). The global spread of the COVID-19 pandemic has been reflected in the spread of misinformation on social media and conspiracy about its origins (Pickles et al., 2021).

Indeed, from the start of the spread of the disease, several fake news related to the subject of the disease have continued to be shared on social networks. For example, the virus is caused by cell phone 5G, it is native to bats, the virus has spread to humans to have financial benefits from vaccination programs, it is a biological military tool, COVID-19 isn't any more dangerous than influenza, but the threats have been exaggerated as a way of limiting freedoms and many other misinformation (Agley-Xiao, 2021).

Really, information sharing false news tends to be more important than positive information (Grabowski et al., 2005). The use of social media as a means of following all the news of the current pandemic is becoming a very popular and relieving method for several categories of people since social media has the capacity to provide information in real time (Islam et al., 2020). Likewise, social media are particularly seen as platforms for disseminating false information in times of crisis (Islam et al., 2020).

From another perspective, according to Alheneidi et al. (2021), personal loneliness during lockdowns has been shown to promote internet addiction behavior as well as a significant number of hours spent online. The study was done in two Arab countries (Kuwait, Saudi Arabia) and showed, in addition, that people who experienced greater loneliness, also got frequent news about the pandemic from social media.

For their part, governments have applied physical distancing strategies and home support orders to control COVID-19 (Cook, Newberger & Smalling, 2020; Jay et al., 2020). Addiction to social media has increased as it is the most accessible and easy to use means of communication and social interaction. They caused excessive consumption and contained information related to COVID-19. Thus, the prohibition and excessive consumption of information related to COVID-19 can lead to acute psychological distress and mental health problems such as anxiety and depression (Zhong, Huang, & Liu, 2021).

The security measures thus taken by governments such as; the compulsory wearing of masks, quarantine, mobility restrictions, social distancing, the closures of several public places, partial curfews and isolation of sick people, have threatened themselves because of erroneous information constantly propagated on social media platforms. Indeed, Wang et al. (2019) found that health-related misinformation is very common on social media and tends to be more prevalent than accurate information, in general.

As a matter of fact, a significant proliferation of disinformation and conspiracy theories was disseminated through several social platforms and consumed by users learning about the COVID-19 pandemic. In general, the epidemic of the new coronavirus (COVID-19) was accompanied by a large amount of fictitious and inaccurate information on the virus, and in particular on social networks (Berriche, & Altay, 2020).

In a descriptive study by Cinelli et al. (2020) on the dissemination of information about COVID-19 in five social media platforms (Twitter, Instagram, YouTube, Reddit and Gab), the analyses highlight huge amounts of information about the covid-19 disease disseminated in the social networks, a large part of which is false information or disinformation.

Truly, this misinformation can bring not only high stress rates and serious mental consequences (Xiao, 2020), but can also have negative impacts on the effectiveness of government strategies such as the compulsory wearing of masks, confinement and social distancing (example: the belief that the virus threat is exaggerated). In the health field, spurious news poses big problems because it can delay or prevent effective care, or even threaten people's lives.

Furthermore, this information is significantly accepted in several populations. As an example, a recent US study on COVID-19 conspiracy speculation found that over 80% of those surveyed believed this theory to be "probably" or "certainly" true (Miller, 2020). In another study, Uscinski et al. (2020) find that 29% of subjects recruited for a survey in the USA believed that the communication on COVID-19 was abusive to disadvantage President Trump.

As well, other studies have shown that if one piece of information is admitted, further and renewed dissemination of scientifically proven narratives would not have a significant impact on belief in disinformation (Agle, & Xiao, 2021).

Although governments and other stakeholders are really suffering from shared misinformation on social media, so far no scale to measure the behaviour of social media users in the face of misinformation.

The objective of this study is to develop and validate a measurement tool to assess the behavior of the social media user in terms of consumption, credibility and sharing of information related to

covid-19 social media users.

II. Materials and Method

1. Declaration of ethics:

This work received the approval of the ethics committee of the “Higher Institute of Sport and Physical Education, Kef, University of Jendouba, Jendouba, Tunisia” and received the ethical authorization of the UNESCO Chair “Health Anthropology Biosphere and Healing Systems, “University of Genoa, Genoa (Italy),“ Higher Institute of Sport and Physical Education of Sfax, Sfax (Tunisia) ”. The proposal was also approved by the Committee of ethics of the University of Jendouba and was undertaken in accordance with the legal standards of the “Declaration of Helsinki of 1964” and its corresponding amendments.

2. Participants and data collection

A total of 874 subjects recruited from social media over two time periods participated in this study. Participants were interviewed by an online questionnaire distributed on two social media platforms (Facebook and Tweeter) during an exploratory phase (n = 179, Mean age = 29.34, SD = 7.98) and a confirmatory phase (n = 695, Mean age = 31.22, SD = 11.63).

The characteristics of the participants in the confirmatory factor analysis phase, age, gender, job, academic level, marital status, are presented in table 1.

Table 1. Characteristics of the participants selected for the confirmatory factor analysis.

		n	%
Gender	Male	338	48,6
	Female	357	51,4
Job	Student	263	37,8
	Public Function	176	25,3
	Jobless	59	8,5
	Liberal Function	168	24,2
Academic level	Retired	29	4,2
	Secondary level	172	24,7
	University level	523	75,3
Marital situation	Single	358	51,5
	Married	233	33,5
	Other situation	104	15

3. Instruments

a) *Sociodemographic questionnaire*

It was a simple questionnaire asking for age, gender, level of education, the city in which the participant was currently living during COVID-19, job, and marital status.

b) *SMCS-12 development*

A thorough review of the literature showed that information consumption includes information seeking and information analysis. The first is defined as the intentional acquisition of information, while information analysis describes how individuals encounter information without planning their actions (Lewis, 2017).

Understanding social media consumption has proven to be a very important dimension to incorporate into the measurement instrument, as it can help analyse how people access disinformation.

Subsequently, the literature has shown that individuals who consume disinformation make a judgment on the credibility of the message, depending on the source of the information, the story and the context (Fisher, 2012). Indeed, the work of Rosnow(1991), has shown that if disinformation circulates repeatedly, it will be absorbed, reinforced and accepted as credible.

A final step in the present process of the specialized bibliography is the sharing of disinformation. Previous studies have reported various personal predictors of sharing misinformation such as fear of missing out; social media fatigue, lack of skills in verifying the reliability of information, and information overload on social media. When an interest is collectively shared by a community about a rumor, the dissemination of the message is amplified.

From these theoretical findings, we operationalized the measurement of disinformation through 12 items that build the SMDS-12 instrument. The first dimension of the SMDS-12 scale assesses the degree to which covid-19 information is consumed from social media. The second dimension reports users' judgments about their degrees of belief and trust in information related to covid-19 shared on social media. The third dimension describes one form of interaction with these informations: the rebroadcasting or sharing of information related to Covid-19 disease.

Each dimension is made up of four items that are rated on a 5-point Likert-type scale ranging from "strongly disagree" to "strongly agree".

Subsequently, a construct evaluation was carried out by a focus group made up of 7 experts: two professionals in social networks (both administrator and content creators), two professors in human sciences, two experts in linguistics, and an expert in information and communication technology. Members of the focus group discussed the components of the items and were invited to collectively modify and validate a usable version of the instrument.

c) *The COVID-19 fear scale*

The Arabic adapted short version of the COVID Fear Scale was used from Alyami et al. (2020). This version has been translated and adapted into Arabic from the initial version of Ahorsu, Lin et al. (2020). The scale assesses fear of covid-19 by a one-dimensional factor divided into seven items assessed on a 5-point Likert scale. Concomitant and confirmatory reliability and validity were examined on a set of Saudi participants.

The internal consistency of the Arabic version examined using the Alpha Cronbach was satisfactory ($\alpha = .88$), with strong concurrent validity indicated by significant and positive correlations with the HADS Anxiety Scale; $r = 0.6$. Likewise, examination of the factor structure Alyami et al. (2020) was adequate (CFI = 0.995; RMSEA [90% CI] = 0.059 and SRMR = 0.024).

d) *The Perceived Stress Scale (PSS-10)*

An Arabic language version of the Perceived Stress Scale by Cohen et al. (1988) adapted by Almadi et al. (2012) was used to assess stress. This scale (PSS-10) is divided into two subscales, the first assess perceived psychological distress, while the second measures coping strategy. Scores are obtained on a 5-point Likert scale ranging from 0 to 4. The reliability and validity of the perceived stress scale of the Arabic version presented a two-factor structure adequate for exploratory factor analysis, and Cronbach's alpha coefficients were 0.74, and 0.77. In addition, the test-retest reliability had an intra-correlation coefficient of 0.90.

For our study considering only the related negative factor which is distress, the coping strategy will not be taken into consideration for the present study.

e) *The Arabic Internet addiction scale (IAT)*

To measure internet addiction, we used the Arabic language adapted scale from Hawi (2012). The Arabic version of (IAT) is an adapted version of the instrument originally developed by Young (2013). It consists of 20 items, each of which is scored on a six-point Likert scale. The scale is justified as a unidimensional construct through these robust psychometric properties. Indeed, the goodness-of-fit indices demonstrated by the confirmatory factor analysis were all adequate: the NFI = 0.96, CFI = 0.98, TLI = 0.98, GFI and AGFI were above the recommended thresholds of 0.90. In particular, the internal consistency examined using the classical Cronbach alpha statistical index was satisfactory ($\alpha = 0.92$).

4. Statistical tools

Data normality was tested by Skewness and Kurtosis tests during the exploratory phase, while multivariate normality was examined during the confirmatory phase. Asymmetry values greater than 7 or kurtosis value less than 3 were judged to be non-Gaussian. (Finney and DiStefano, 2013) and possessing low psychometric sensitivity (Marôco, 2014). In addition, the Mardia coefficient of multivariate normality was calculated during the confirmatory phase.

The exploratory analysis was carried out by a principal component analysis with a Varimax rotation. The factors selected have eigenvalues greater than 1. In addition, an item will be deleted if its factor load is less than 0.5. The scale relationships have been examined through Pearson's correlation tests between the SMDS-12 with the two tests: the COVID-19 Fear Scale test and the PSS-10 perceived stress test.

First and second order confirmatory factor analysis were performed to examine the factor structure of the instrument.

Descriptive Statistical analysis of the factor structure were performed by Statistical Package for the Social Sciences (SPSS) for Windows version 26 (IBM Corp. Armonk, NY) and AMOS software for Windows version 23. While the internal consistency indices were calculated using JAPS open source software. The use of these software guarantees a thorough analysis of the data collected.

III. Results

1) Exploratory factor analysis

Table 1 shows the descriptive statistics (means and standard deviations), the Skewness and Kurtosis coefficients of normality and the Lamda Factor loadings. The coefficients of normality prove the normality of the distributions. Skewness values greater than 2 and Kurtosis values greater than 3, indicate that the item is not normally distributed (Westfall and Henning, 2013).

The results indicated that the scale was appropriate for factor analysis (KMO = 0.87; Bartlett's test of sphericity = 1465.83 ;DF=66; $p < 0.001$). Exploratory factor analysis indicated a three-factor solution (eigenvalue = 5.60), explaining 77.22% of the total variance, with items that had a factor loadings ranging (Lamda) from 0.78 to 0.87. The first factor explained 46.67% of the total variance, the 2nd factor explained 18.65% of the variance and the last factor 12.40% of the variance.

Table 2. Descriptive statistics, normality, and Factor loadings from exploratory factor analysis

M	SD	Skewness	Kurtosis	Lamda
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I1	3,06	1,15	-0,01	-0,66	0,86
I2	3,04	1,14	0,05	-0,84	0,82
I3	3,09	1,09	-0,10	-0,57	0,84
I4	2,97	1,11	0,08	-0,72	0,85
I5	2,75	1,07	0,09	-0,69	0,87
I6	2,81	1,02	0,17	-0,51	0,80
I7	2,73	1,05	0,07	-0,65	0,78
I8	2,66	0,99	0,08	-0,59	0,86
I9	2,33	1,10	0,35	-0,89	0,85
I10	2,29	1,13	0,35	-1,00	0,82
I11	2,31	1,09	0,34	-0,88	0,84
I12	2,37	1,13	0,44	-0,72	0,85

2) Confirmatory factor analysis

Before proceeding with the confirmatory factor analysis, univariate and multivariate tests of normality were performed. The results indicate that the item distribution follows Gause's theorem (see Table 3). While the Mardia coefficient of multivariate normality indicated a value of 15.83 with a cr of 11.38. These results suggest that multivariate normality is violated. Indeed, the Mardia coefficient is sensitive to the size of the sample. Additionally, psychometric data tend to be non-normal.

Table 3. Means, standard deviations and normality of SMDS-12items for the confirmatory sample.

Variables	M	SD	skewness	c.r.	Kurtosis	c.r.
I1	3,05	1,22	-0,04	-0,40	-0,87	-4,68
I2	3,08	1,18	-0,11	-1,20	-0,80	-4,31
I3	2,98	1,14	-0,04	-0,48	-0,75	-4,06
I4	2,94	1,16	0,02	0,25	-0,78	-4,20
I5	2,84	1,12	0,01	0,14	-0,80	-4,30
I6	2,87	1,16	0,08	0,86	-0,79	-4,27
I7	2,73	1,11	0,12	1,29	-0,73	-3,95
I8	2,72	1,06	0,07	0,78	-0,68	-3,65

I9	2,47	1,13	0,27	2,85	-0,85	-4,57
I10	2,48	1,12	0,28	3,02	-0,82	-4,39
I11	2,40	1,11	0,33	3,58	-0,78	-4,21
I12	3,08	1.18	0,29	3,11	-0,85	-4,58

Figure 1 shows an overview of the model of the CFA by the Amos IBM software for wide-SMDS-12 following the recommendations of Comrey & Lee (1992) which suggest that a factorial weight greater than 0.71 is considered to be excellent, we note that all items adequately represents the pre-established theoretical constructs.

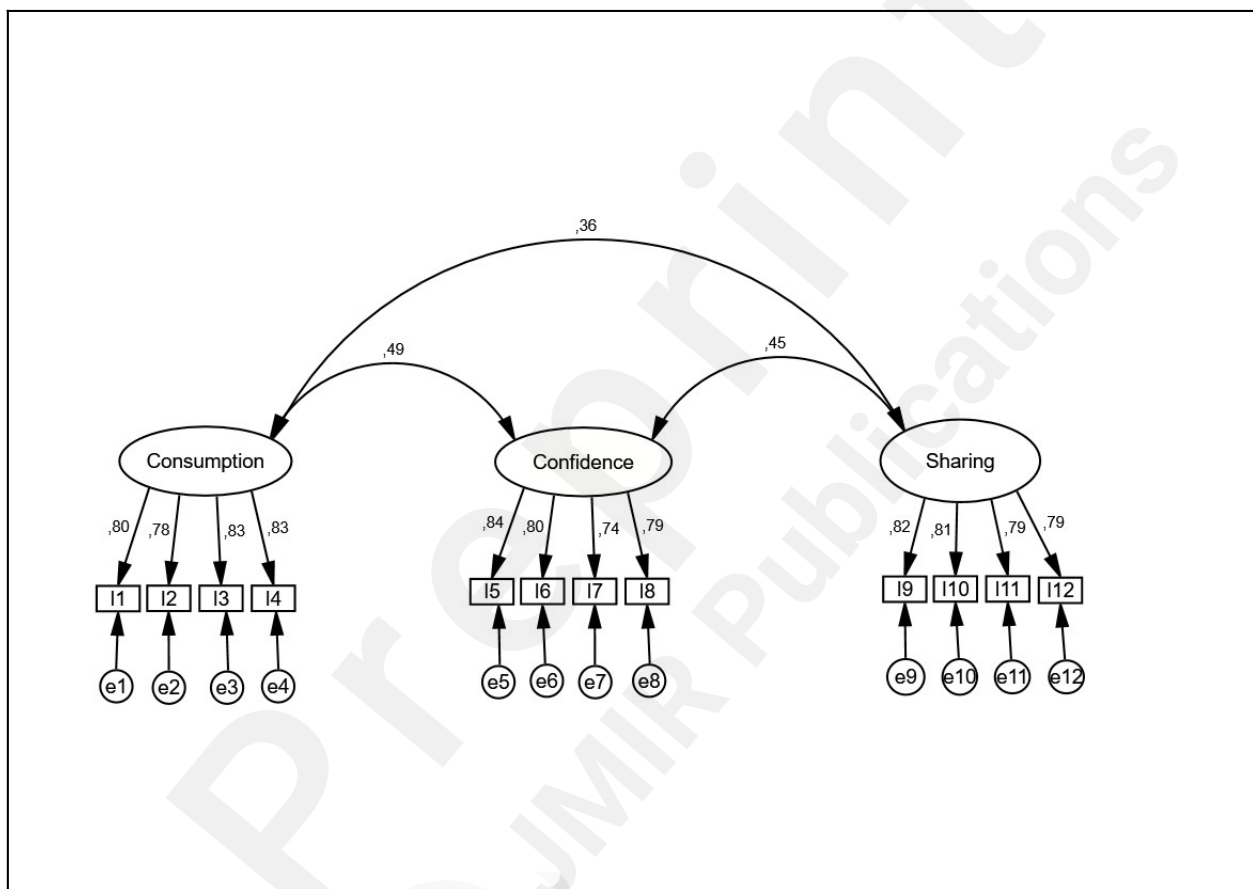


Figure 1. The Final Confirmatory Factor Analysis (CFA) of SMDS-12

Footnotes: $\chi^2 = 90.89$, $df = 51$, $p < .001$, $\chi^2 / df = 1.78$, $GFI = 0.98$, $AGFI = 0.97$, $TLI = 0.99$, $CFI = .99$, $RMSEA = .033$ (90% CI: .022, .045), and $SRMR = .0034$.

The CFA results provided evidence for the three-factor structure of SMCS-10. The factor loads were acceptable and good (range 0.74 to 0.84).

The value of $\chi^2 = 90.89$ very significant at $p < .001$ and this may be due to the size of the sample. However, $\chi^2 / df = 1.78$; it respects the usual recommended threshold. The values of GFI and AGFI are respectively 0.98 and 0.97. These two values must be greater than or equal to 0.90. In addition,

the two indices TLI and CFI tend towards 1 and respect the threshold value of 0.95. Finally, the error indices RMSEA = 0.033 (90% , CI: 0.022, 0.045) and SRMR = 0.034 show that the measurement errors are tolerable.

3) Internal Consistency

The internal consistency of the three scale factors was calculated by the three indices McDonald's ω , Cronbach's α and Gutmann's λ_6 . Examination of the indices for the three components of the scale yields values greater than or equal to 0.87. This proves the internal consistency of the scale. Likewise, a good internal consistency is proved by the Cronbach's α indices which have values of 0.88, 0.87 and 0.87 for the Consumption, Confidence, and Sharing subscales respectively, and the Gutmann coefficients's λ_6 which are greater than or equal to 0.84.

Table 4. Internal consistency of the SMDS-12

	McDonald's ω	Cronbach's α	Gutmann's λ_6
Consumption	0,88	0,88	0,85
Confidence	0,87	0,87	0,84
Sharing	0,88	0,88	0,84

Relationship between the credibility of misinformation and mental health during the covid-19 pandemic

The correlation matrix provided positive, significant and moderate associations between the dimension of Consumption with Internet addiction IAT ($r = 0.37$), perceived stress ($r = 0.29$), and the fear of covid- 19 ($r = 0.32$). For the Confidence sub-scale, a moderate correlation was demonstrated with IAT ($r = 0.34$), while the correlation of the dimension with Perceived Stress (PSS-10), and fear of Covid-19 (CF) was 0.018 and $r = 0.20$ respectively. The Sharing dimension presented a correlation coefficient $r = 0.19$ with Internet Addiction (IAT) and lower coefficients for stress and COVID-19 Fear (CF). They were 0.084 and 0.16 respectively.

Table 5. Correlation matrix between SMCS-10, internet addiction and mental health parameters related to COVID-19.

	Consumption	Confidence	Sharing	IAT	STRESS	CF
Consumption	-----					
Confidence	,33**	-----				
Sharing	,30**	,38**	-----			
IAT	,37**	,34**	,19**	-----		
STRESS	,29**	,18**	,084*	,12**	-----	
CF	,32**	,20**	,16**	,13**	,36**	-----

IV. Discussion

The objective of this study was to develop and test the psychometric properties of the SMDS-12 measurement scale to assess consumption, confidence, and sharing of information related to covid-19 by social media users. The 12-item scale was initially tested through exploratory factor analysis.

The test supported the three-dimensional structure, plus no items were removed from the measurement scale. Subsequently, confirmatory factor analysis confirmed the robustness of the measure following the use of several adjustment indices according to the recommended standards. The reliability of the instrument examined by means of three internal consistency indices demonstrated that the three dimensions of the instrument are reliable.

The correlation between the three dimensions of the instrument with the internet addiction scale and mental health factors showed positive associations which lie in a range from small (for the relationship of the sharing dimension with stress) to moderate for the association of the other two factors with internet addiction, stress and fear of Covid-19.

Regarding the links between the consumption of disinformation and internet addiction, similar results have been reported by Garcia-Priego et al. (2020). The same authors found that Internet addiction and overexposure to rapidly spreading disinformation (infodemia), are associated with anxiety and depression. In addition, the Internet addiction to obtain information about COVID-19 disease has increased stress and anxiety levels.

Furthermore, in another study of COVID-19 related to disinformation flows on social media in Australia (Pickles et al., 2021), identified the prevalence and factors associated with the concept. The results showed that disinformation was linked to demographic variables such as age, gender and academic level. However, and consistent with our findings, misinformation beliefs were significantly associated with fear of COVID-19 in addition to other variables such as lower levels of health education, trust in government and confidence in science.

During the COVID-19 pandemic, internet addiction and the use of social media in particular have increased significantly (Dubey et al., 2020). Also, time spent using the internet was associated with sharing misinformation related to the context of the illness (Apuke, & Omar, 2020).

Moreover, Alhindi et al. (2021), examined the association between social media and mental health settings linked to the COVID-19 epidemic. The results showed that social media use was linked to depression, and excessive social media use led to mental health issues.

As well, and in the same context, our findings are also in line with a pilot study by Zhong, Huang, & Liu (2021), which examines the possible association between social media use and mental health toll linked to the COVID-19 pandemic in China. This study found that social media use was linked to both depression and secondary trauma, which also predicted a change in health behavior.

Contrariwise, in a cross-sectional survey by Agle & Xiao (2021) profiles of similar credibility about the information shared on the Covid 19 disease, were highlighted. Indeed, the results of the study revealed the existence of four belief profiles. 70% of the subjects surveyed believed in the scientifically accepted account (zoonotic origin) but not in the ill-informed or conspiratorial accounts. Other profiles disagreed with the zoonotic explanation, but instead believed in additional misinformation to varying degrees. However, trust in science was a strong and significant predictor of membership in the profile.

Regarding the acquisition of disinformation and its sharing, Chua and Banerjee (2017) showed that gullible users have a greater propensity to share health rumors online. For that reason, Li and Sakamoto (2015) suggested that exposing individuals to collective opinion measures may reduce the tendency to share false health messages. To explain the mechanism well, we use the theory of cultural attraction. Indeed, this theory postulates that the spread of rumors results from psychological pull factors. The reasons for the propagation of this false information are mainly aimed at the recruitment of cognitive pull factors likely to increase interactions (Acerbi, 2019). Indeed, on these platforms, content creators produce their works with a strong psychological appeal to encourage users to react to them and increase their audiences.

This highlights the need for much more research into the cultural, psychological and social characteristics of users who trust and disseminate this content on social media. In particular, it is crucial to better understand the roles of thought and belief systems. For example, they should also be explored in empirical studies, and in particular those that use mathematical models of big data.

V. Conclusion and recommendations

The results provided a first demonstration for assessing the credibility of information related to covid-19 disease on social media. The scale exhibits robust psychometric properties and can be adapted for other contexts to assess user engagement with social media use, credibility of information, and interaction with information in terms of sharing. This measurement tool will also serve researchers in their studies on user behavior in social media, and decision makers in their reactions to different social platforms.

Limitations of the study

The main limitations of the study are the lack of concurrent validity testing of the instrument with similar instruments. In addition, the instrument has only been tested on a single population living in a single country. Also, the study did not present ways that can reduce credibility and share rumors and misinformation.

Another limitation relates to the study population, the data was collected with a set of Tunisian social media users. Although we have confirmed the validity and reliability of the measurement instrument for these participants, a certain specificity linked to the cultural context does not allow the generalization of the results.

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Annex

SMDS-12 Scale

Consumption

1. I am looking for news about the coronavirus disease (Covid-19) in social networks.
2. People who are part of my social networks disseminate information about the coronavirus (Covid-19).
3. All news regarding the coronavirus disease (Covid-19) is accessible to me from my social networks.
4. I never worry about finding information about the coronavirus (Covid-19) from social media.

Confidence

5. I trust the information disseminated on social networks about the coronavirus disease (Covid-19).
6. News on social media about the coronavirus disease (Covid-19) are credible in its majorities.
7. The information disseminated on social networks about the disease of the coronavirus (Covid-19) is credible to me.
8. I never trust information posted on social media about the coronavirus disease (Covid-19).

Sharing

9. I share all coronavirus disease (Covid-19) information on social media.
10. I choose the information related to the coronavirus disease (Covid-19) that I share.
11. I often rebroadcast information I receive about coronavirus disease (Covid-19).
12. People on my social networks often receive information related to coronavirus disease (Covid-19) from my account.