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DISCRIMINATION OF CLINICAL AND NONCLINICAL CONDITIONS OF THE DIGITAL APPLICATION S-ONapp FOR THE ASSESSMENT AND TESTING OF SEXUAL DYSFUNCTIONS

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Abstract

Objective: **The current study aims to evaluate the diagnostic validity of the scales included in the S-ONapp application.**
Methods: **This cross-sectional study was conducted between February 28, 2022, and April 30, 2022, on subjects from the USA, Europe, Canada and Asia. A clinical group of 430 subjects and a non-clinical control group of 420 subjects were drawn.**
Results: **Multiple comparisons were made between the two groups, the S-ONapp application proving its discriminatory capacity between the clinical and non-clinical groups.**
Conclusions**: The S-ONapp application, includes sexual dysfunction assessment and testing tools that present a clinical robustness in the diagnosis of sexual dysfunctions.**

Key words: diagnosis, sexual dysfunctions, S-ONapp application.

INTRODUCTION

The current context in an era of post-pandemic speed determines the need for evolution of digitization on as many social levels as possible. Starting from the tendency of the psychological field to adapt to the transformations and challenges imposed by the evolution of technology (Ostermann et al., 2021 & Ostermann, 2021), numerous methods of digital clinical interventions aimed at computer-assisted psychotherapy (D'Alfonso et al., 2020) or clinical monitoring for patients with depression via smartphone have been built (Dennis et al., 2014).

The possibility of diagnosing sexual disorders through digital applications that can be accessed from a smartphone, a tablet, or a computer (Bakker & Rickard, 2018) suggests a solution for ensuring discretion, reducing travel costs and waiting times. Starting from this concept, the U.S. Food and Drug Administration (FDA) proposed the regulation of these applications, in order to protect patients by minimizing the risks associated with their use (Yetisen et al., 2014). Moreover, the pandemic period could prove the usefulness and effectiveness of such applications for couples around the world to adapt and prevent a sexual disorder (Delcea et al., 2021).

The SONapp application offers the possibility of evaluating and testing the diagnosis of sexual dysfunctions. It is a software application and a modern method of clinical intervention and assessment for the sexual profile of the in-

dividual. The S-ONapp gives people interested in sexual performance, researchers and clinical students quick access to clinical evaluation and testing of sexual life in order to make it harmonious (Delcea, 2022).

Starting from the validation and standardization of DS-Mapp (Delcea, 2020), the present study had the aim to evaluate the diagnostic value of the scales included in the S-ONapp digital application. Therefore, The General Clinical Sexual Screening, The Cognito-Sexual Questionnaire (CCS) and The Genogram of Sexual Stimuli (GSS) were analyzed.

METHODS

Objectives

The research aims to evaluate the clinical diagnosis value of S-Onapp. In this way, the application's ability to discriminate between the clinical and the non-clinical group was monitored.

Participants

In order to establish the diagnostic discrimination capacity of the SONapp application between the clinical and non-clinical group, a total of 850 participants were selected, 420 of them being included in the non-clinical group and 430 in the clinical group. Regarding the gender distribution, in the clinical group, 53% of the participants were male and 47% were female and in the nonclinical group, 51% were male and 49% female.

The clinical group included all the sexual dysfunctions provided by the proposed scales but in different proportions (erectile dysfunction (31%), decreased sexual desire (16%), ejaculation disorder (11%). The female participants had the following disorders: decreased sexual desire (17%), orgasm disorder (20%), and dyspareunia (10%).

Eligibility criteria

In order to evaluate the clinical discrimination ability of the application, subjects were selected who met the eligibility criteria for the study as follows: to be over 18 years old, to have started sexual life before inclusion in the study and to have no mental disorders and/or personality or other neurodevelopmental or neurocognitive disorders.

Procedures

The selection of participants was carried out online, the procedure being non-probabilistic, between February 28, 2022, and May 7, 2022, and was based on convenience. In this sense, the participation link related to the SONapp application[1] was published on social networks, on the portals of health institutions' websites[2].

Thus, the interested persons accessed the application and agreed to participate in this study in the consent form regarding the purpose of the research and their participation in the test as well as the aspects related to Regulation (EU) 2016/679 regarding the protection regarding the processing of personal data and the free movement of such data and the repeal of Directive 95/46/CE (General Data Protection Regulation) and Law no. 506/2004 regarding the processing of personal data and the protection of private life.

Following announcements on social networks and other profile websites, participants downloaded the S-ONapp version 1.0.5 from Google Play, with the sexual dysfunction assessment and testing tools. All the collected data were analyzed and processed in automatic tabular format. The SONapp digital application contains following instruments:

Measures

The General Clinical Sexual Screening, has six scales of assessment and clinical testing: the assessment of medical conditions, the assessment of mental conditions, the assessment of maladaptive sexual style, the assessment of couple problems, the assessment male sexual dysfunctions (ejaculatory disorders, erectile dysfunction, desire disorder, and male dyspareunia) and assessment of female sexual

[1]https://play.google.com/store/apps/details?id=

[2]www.sexology.ro com.sonegid.son&fbclid=IwAR1E9g36NbzIFgfuP2u7ph7bhi6tUX3ca1ioaZBNdyiK77l264-zrtt6DJE

dysfunctions (sexual desire disorder, arousal disorder, orgasm disorder, and female sexual pain disorders). This screening tool aims to assess sexual health status, being able to identify the presence or absence of a potential sexual disorder.

The Cognitive-Sexual Questionnaire (CCS) is a multidimensional assessment tool regarding the operationalization of arousal stimuli at the cognitive level. CC-Sapp measures three cognitive patterns of the participant regarding the adaptive or maladaptive management of arousal stimuli: how they cognitively process arousal stimuli during sexual intercourse; how they cognitively operationalize sensations during sexual intercourse and how the cognitive influences sexual behavior.

Thus, the instrument has three scales (CC-Sco, CC-Ss and CC-Sc): the first scale (CC-Sco) refers to the measurement of cognitive processes mediated by perceptual analyzers (hearing, sight, tactile sensations, smell and taste) and to how the individual adapts or not; the second scale (CC-Ss) refers to the processing of identified sensations as well as how the individual adapts or not; and the last scale (CC-Sc) refers to how the individual manifests himself, adaptively or not, during the sexual act.

The Genogram of Sexual Stimuli (GSS) is an interactive computer system mediated by a specialized software application on the qualitative evaluation of arousal stimuli that generate or not pleasure (Gpapp), relaxation (Grapp) and arousal (Geapp). The Stimulus Genogram is a projective test that qualitatively indexes the stimuli, from 1 to 10 for pleasure (attraction), for relaxation (good mood) and arousal (stimulation), memorized during sexual acts in women and men. Gapp features facilitate access to a qualitative and dimensional assessment (pleasure, relaxation and arousal) of arousal stimuli and generate on the phone and/or tablet the user's clinical/non-clinical conceptualization of operationalization with sexual stimuli at the level of pleasure (Gpapp), relaxation (Grapp) and excitement (Geapp). Gapp meets all security requirements, has good IT functionality, with clinical/non-clinical discriminative robustness, is accessible to anyone, easy to use and has an interface language adapted to the level of culture and schooling, so that the user develops a compliance to remission of sexual dysfunctions and to optimize their intimate and couple life to the maximum.

RESULTS

Two groups were included in the present study. A non-clinical group with participants who did not present mental personality or sexual disorders and a clinical group including participants with sexual dysfunctions. (mean±SD variance of overall score was 4.3±0.021.)

In order to highlight the discriminatory capacity of the S-ONapp application, targeting tools with diagnostic value, a comparison was made that aimed to identify the differences between the clinical and non-clinical group for each diagnostic tools submitted to analysis.

Eligibility conditions of statistical inference procedures were verified by descriptive analysis (Table 1) for the scales of each diagnostic tool related to the S-ONapp application, looking at the averages, and the skewness and kurtosis coefficients regarding the normality of the distribution.

Descriptive indicators show that the averages obtained on each scale of the three analyzed instruments indicate large differences between the clinical and non-clinical groups. The average values tend to be higher in the clinical group. They will also take into account the fact that the skewness and kurtosis fall within the range of 1.96±. Thus, there are normal distributions for each scale.

In order to meet the eligibility conditions for performing the comparison, homogeneity of the variances was checked with the Levene test. Thus, the obtained coefficients (Table 2) for each scale vary between 1.96 and 6.12, the significance threshold exceeding the value of 0.05. Statistical data indicate that compared groups do not differ significantly, being equivalent in terms of data variance.

Statistical analysis indicates the existence of significant differences between the clinical

Table 1. Descriptive indicators

	Scale	Group	N	Mean	Skewness	Kurtosis
S-ONapp Clinical Screening.	Medical	Nonclinic	420	5.42	0.96	1.08
		Clinic	430	9.21	-1.29	1.16
	Thinking and behavior	Nonclinic	420	4.32	0.34	0.93
		Clinic	430	8.51	0.52	-0.29
	Psychological disorders	Nonclinic	420	2.89	1.14	1.19
		Clinic	430	5.13	0.86	1.27
	Couple problems	Nonclinic	420	3.46	1.02	-0.91
		Clinic	430	6.92	0.89	0.74
	Female sexual dysfunction	Nonclinic	420	1.96	0.96	1.58
		Clinic	430	4.82	-0.75	-0.94
	Male sexual dysfunction	Nonclinic	420	2.64	0.65	0.89
		Clinic	430	5.92	0.82	1.64
Cognitive-sexual questionnaire	CC-Sco	Nonclinic	420	6.75	-0.61	-1.23
		Clinic	430	8.98	1.02	1.51
	CC-Ss	Nonclinic	420	5.45	0.93	1.22
		Clinic	430	9.21	1.16	1.43
	CC-Sc	Nonclinic	420	6.12	1.26	1.19
		Clinic	430	9.01	1.04	1.42
S-*ONapp Sexual stimulus preferences questionnaire*	Gp*app*	Nonclinic	420	4.84	0.91	1.02
		Clinic	430	7.26	1.07	-1.61
	Gr*app*	Nonclinic	420	5.09	1.17	1.14
		Clinic	430	8.92	0.42	1.21
	Ge*app*	Nonclinic	420	4,22	1.02	1.26
		Clinic	430	8.78	1.03	0.86

Table 2. Comparisons between clinical and nonclinical groups

	Scale	Comparison coefficient T	Sig. (p)
S-ONapp Clinical Screening	Medical	5.42	.006
	Thinking and behavior	4.32	.001
	Psychological disorders	2.89	.014
	Couple problems	3.46	.028
	Female sexual dysfunction	1.96	.012
	Male sexual dysfunction	2.64	.025
Cognitive-sexual questionnaire	CC-Sco	6.75	.033
	CC-Ss	5.45	.015
	CC-Sc	6.12	.018
S-ONapp Sexual stimulus preferences questionnaire	Gpapp	4.84	.012
	Grapp	5.09	.031
	Geapp	4,22	.003

and non-clinical groups. The comparison coefficients obtained (Table 2) vary between 1.96 and 5.42, the significance threshold for the scales under analysis being lower than 0.05.

Using Gpower we obtained the value of the large effect size (d) = 0.8 and the power of the research selling the value of 0.5, which implies a moderate difference effect.

DISCUSSIONS

The aim of the work was to evaluate the diagnostic value of the scales contained in the S-ONapp application. Significant differences were identified between the clinical and non-clinical groups on the six scales included in the general clinical screening, which represents the first step taken by the user. The differences

between the clinical and the non-clinical groups are significant, both for the Medical Scale and for Thinking/beliefs and behavior Scale, Psychiatric disorders Scale, Couple problems Scale, Female sexual dysfunction Scale and Male sexual dysfunctions Scale. This tool allows assessment and testing of sexual and couple health status. The averages obtained by the clinical group were much higher than in the case of the non-clinical group.

Significant differences between the clinical and the non-clinical group were also found in the case of the Cognito-Sexual Questionnaire (CCS) on the scale that measures the cognitive processes mediated by perceptual analyzers and the individual's adaptability, on the scale that aims at the individual's adaptation in processing the identified sensations, corresponding to the individual's adaptability during sexual intercourse. Thus, the non-clinical group showed greater adaptation capacity to the clinical group.

The results indicate the existence of significant differences between the clinical and the non-clinical group in terms of the individual's ability to operationalize with sexual stimuli for pleasure, relaxation and excitement. The clinical group provided superior results to the non-clinical group.

It should be taken into account that this study has limitations, such as the fact that the clinical group (N=430) and the non-clinical group (N=420) did not include the same number of participants. Also, the number of women and men is not equal, the proportions being only close. Distribution of sexual dysfunctions identified for the clinical group are not identical. This fact could influence the results obtained. Erectile dysfunctions were the most common among men and in women, orgasmic disorders were predominantly identified. Decreased sexual desire was identified in higher proportions in women than in men. These results are also influenced by the sampling method.

CONCLUSIONS

The objective of the research was to evaluate the diagnostic value of the scales included in the S-ONapp application, starting with the ability to discriminate between clinical and non-clinical groups. In this way, the S-ONapp application is dedicated to patients with sexual dysfunction (Anderson et al., 2015 & Bloom et al., 2016), in order to diagnose and assist them online (Chan, L. S., 2017).

The obtained results highlighted the existence of differences between the two analyzed groups, confirming the diagnostic potential of the scales from the S-ONapp application. Thus, a detailed exploitation of a new perspective in approaching psychodiagnosis is required, optimizing traditional tools, and adapting psychology services to the needs of the contemporary society.

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REFERENCES

1. Anderson, K., Laxhman, N., Priebe, S. (2015). Can mental health interventions changesocial networks? A systematic review. BMC Psychiatry 2015; 15:29
2. Bakker, D., Rickard, N. (2018). Engagement in mobile phone app for self-monitoring of emotional wellbeing predicts changes in mentalhealth: MoodPrism. J Affect Disord 2018; 227:432–442
3. Bloom, T., Gielen, A., & Glass, N. (2016). Developing an App for College Women in Abusive Same-Sex Relationships and Their Friends. Journal of homosexuality, 63(6), 855–874. https://doi.org/10.1080/00918369.2015.1112597
4. Chan, L. S. (2017). The Role of Gay Identity Confusion and Outness in Sex-Seeking on Mobile Dating Apps Among Men Who Have Sex with Men: A Conditional Process Analysis.

Journal of homosexuality, 64(5), 622–637. https://doi.org/10.1080/00918369.2016.1196990
5. D'Alfonso, S., Lederman, R., Bucci, S., Berry, K. (2020). The Digital Therapeutic Alliance and Human-Computer Interaction.JMIR Ment Health. 2020 Dec 29;7(12): e21895. doi: 10.2196/21895.
6. Delcea, C. (2022). Construction, Validation, and Standardization of the Sexual S-On Application. International Journal of Sexual Health, 34, pp. 196-199, Taylor and Francis Group. 1-331, DOI: 10.1080/19317611.2022.2017618.
7. Delcea, C., Chirilă, V. I., Săuchea, A. M., (2021). Effects of COVID-19 on sexual life – a meta-analysis. Volume 30, Issue 1, January–March 2021, Pages e49-e54. Sexologies. Elservier.
8. Delcea, C. (2020). Construction, Validation, and Standardization of the Sexual-DSMapp Application. Volume 2, Issue 2, December 2020, Pages 70-75, https://doi.org/10.1176/appi.prcp.20190047
9. Dennis, T. A., O'Toole, L. J. (2014). Mental health on the go: Effects of a gamified attention-bias modification mobile application in trait-anxious adults. Clinical Psychological Science. Advance online publication. doi: 10.1177/2167702614522228.
10. Ostermann, T. (2021). Psychological perspectives and challenges towards information
11. technology and digital health interventions. Proceedings of the 14th International Joint Conference on Biomedical Engineering Systems and Technologies (HEALTHINF), 5 (2021), pp. 7-12Annu. Rev. Psychol., 19 (1968), pp. 135-168
12. Ostermann, T., Röer, F. J., Tomasik, J. M. (2021). Digitalization in psychology: A bit of challenge and a byte of success, Patterns, Volume 2, Issue 10, 2021,100334, ISSN 2666-3899, https://doi.org/10.1016/j.patter.2021.100334)
13. Yetisen, K. A., et al. (2014). The regulation of mobile medical applications. Lab Chip, 2014,14, 833-840. Royal Society of Chemistry.