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PSYCHOLOGY 2.0: OPPORTUNITIES AND CHALLENGES FOR THE PSYCHOLOGY PROFESSIONAL IN THE FIELD OF EHEALTH

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La eSalud está reconocida a nivel nacional, europeo e internacional como una prioridad estratégica para el sistema sanitario. La Psicología, como profesión sanitaria, tiene la oportunidad y la obligación de profundizar su actividad en un ámbito donde hasta ahora no había tenido una gran presencia. Los principios básicos de la Web 2.0 integrados a la práctica profesional exigen, más allá del uso de la tecnología, una nueva actitud y compromiso hacia la colaboración, la transversalidad, y la consideración de la capacidad de automanejo de las personas respecto a su salud. Es la Psicología 2.0, que plantea interesantes oportunidades laborales y retos a los que la disciplina y los colegios profesionales deberán dar respuesta para asegurar la calidad del servicio de las personas.
Palabras clave: *Psicologia 2.0, eSalud, Salud 2.0, ePacientes, Tecnologías de la Información y el Conocimiento (TIC), Psicología profesional.*

eHealth is recognised as a strategic priority for the healthcare system at the national, European and international levels. Psychology, as a health profession, has the opportunity and the obligation to extend its activity into an area in which it has not had a notable presence until now. The basic principles of the Web 2.0 integrated into professional practice require, more than simply the use of technology, a new attitude and commitment towards collaboration, the adoption of a transversal perspective of technology in all areas of activity of psychologists and the consideration of people's self-management abilities regarding their own health. Psychology 2.0 proposes interesting job opportunities and challenges, to which the discipline and the professional associations must respond, in order to guarantee service quality to the people.
Key words: *Psychology 2.0, eHealth, Health 2.0, ePatients, Information and communications technology (ICT), Professional psychology.*

EHealth is considered a strategic priority by relevant global institutions such as the World Health Organization, which has created the Global Observatory for eHealth, and the European Commission, which endorses it in different documents such as the "eHealth Action Plan 2012-2020: Innovative healthcare for the 21st century", (European Commission, 2012) and through its funding program, Horizon 2020, the EC makes clear its interest in promoting eHealth, understood as the incorporation of new technologies into healthcare practices both at the level of care and in the areas of promotion and prevention (Eysenbach, 2001).

In addition, the field of eHealth in disciplines such as medicine and nursing, has made significant progress with conferences, publications and specific professional associations. However, the contribution of psychology in the field of eHealth has not been as prolific as in other fields, although there are many psychologists that participate in events in this markedly multidisciplinary field.

This framework is changing, with psychology professionals becoming increasingly involved in the field of eHealth. With the recognition of psychologists as health practitioners, based on the provisions of the General Law of Public Health, at the level of the psychologists association, the participation of psychologists has been promoted in the Health Advisory Board of the Ministry of Health. This advisory board contributes to the government's decision-making on issues relevant to the field of healthcare. One of the last projects that the advisory board has been working on is the development of a report called "eHealth: A strategic priority for the healthcare system" (Infocop, 2014). The report details a number of strategic areas, some of which are highly relevant in the professional field of psychology, since they refer to key aspects such as the training of psychologists, the legislation governing eHealth, research related issues, organisational structures needed for its implementation, etc.

In recent years, not only the technological, but also the organisational foundations of eHealth have been

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established, with work being carried out in areas such as electronic health records, technological standards, and the digitalisation of tests. In general, efforts have been directed towards the technological and organisational aspects of healthcare especially in hospitals. These aspects, which are essential and require great effort, are still just the first dimension of a broader project that should now begin to focus on citizens and their needs, including the psychological, and stop focusing on the health system itself.

The second dimension of eHealth, much more focused on the aspects of "way of thinking", "attitude" and, ultimately, the paradigm shift that Eysenbach referred to in 2001, which began to take shape in the mid-2000s with the emergence of the web 2.0 technologies which, in reality, are nothing more than a set of technologies that promote the exchange of information and knowledge, as well as the creation of content by Internet users, and enable the real value of technology to be precisely this possibility of interaction (Torkington & Nathan; Torkington, 2006; Cabrer, 2009). Some good examples of this interaction potential are social networks such as Facebook, Youtube, Flickr, Instagram, etc.

Naturally, as health is a relevant issue for the majority of people, the "global conversation" about health through applications such as the Web 2.0 has not taken long to arrive and terms have been coined such as Health 2.0 and Salud 2.0. The idea behind them (Cabrer, 2009; Armayones & Hernandez, 2007) is none other than the application of the fundamentals of the Web 2.0 in the field of healthcare and its benefits for individual and community health, and for the administration itself, which can have both information generated by citizens and new and effective communication channels, for example, in order to develop prevention and health promotion campaigns.

These tools of the Web 2.0 have promoted a new type of practitioner-user relationship that is promoting useful collaborative work in professional areas as specific as biomedical research through what are known as crowdsourced health research studies (Swan, 2012; Camerini & Schulz, 2012; Frost & Msagli, 2008), underlying which there are ideas such as that of the "data donor," the active participation of patients in the registering, management and monitoring of useful variables in order to collaborate with research into their diseases and, in general, the adoption of a constructive and active role not only in the management of the disease itself, but also in contributing to research into its treatment. In fact, the term "ePatient" has already existed for some years, designated by Ferguson and Frydman (2004); it describes people that are interested and involved in decisions about their health and who have computing and information management skills that enable them to participate actively in the management of their disease.

The generic concept of Health 2.0 has been adapting to various healthcare disciplines, which are integrating it in a natural way, both in healthcare and in specific areas of research. The term Medicine 2.0, which defines a collaborative, open, type of medicine based on social relationships and offering the patient a greater capacity for self-management and empowerment in relation to their illness (Eysenbach, 2008), (Van De Belt, Engelen, Berben, Schoonhove, 2010), has become more established year after year and today there already exist specialised scientific publications, as well as worldwide conferences on Medicine 2.0.

In our discipline we believe that much of the use of information and communication technology (ICT from here on) in the field of psychological care is conceived more as telepsychology than as Psychology 2.0, in that the idea behind many studies is that of a professional who has certain knowledge and applies it to help a person who is suffering from some kind of disorder, emotional problem, etc. This is often done "remotely" and at other times in the consultancy room, using the new technologies as just another working tool. This type of intervention has been performed for several years in our country with good results (Botella Arbona, Quero Castellano, Serrano, Baños Rivera, & García Palacios, 2010).

But while the field of telepsychology is constantly developing and, as we shall see, there are many studies demonstrating its viability and good results, we believe that the field of Psychology 2.0 can complement it and bring a new vision, and hopefully new job opportunities for psychologists through the incorporation of the potential that the Web 2.0 offers. This potential is basically the active participation of users creating new content, discussing the existing content and contributing to the generation of collective intelligence through the aggregation of data that these users can provide in relation to different areas, in terms of both health and the disease and disorders that they may suffer from (Armayones, Pousada, Gómez-Zúñiga, Nafría, & Serrano, 2012).

The aim of this paper is to provide a reflection on the concept of Psychology 2.0, as well as an analysis of the main opportunities and future challenges that it faces. These opportunities and challenges are presented in a single section with the aim of highlighting that the opportunities involve challenges and the challenges, in

turn, do not cease to be a source of opportunities for the development of our discipline.

To frame our discussion we will start with a first definition of Psychology 2.0, which we understand as the integration into the field of psychology of the basic principles of the Web 2.0 and Health 2.0, such as the active participation of the individual in managing their health, the co-creation of content, and collaborative work (with the practitioner and/or among patients) in online assessment and psychological care, individually, in groups and in the community. This assessment and intervention can be carried out in both health promotion and prevention, and in healthcare and clinical settings.

Then, by way of prospective analysis, we analyse the opportunities and challenges of psychology 2.0, in areas such as psychological assessment, intervention, research, and training of professionals in incorporating the potential of the Web 2.0 to their professional practice.

THE OPPORTUNITIES AND CHALLENGES OF PSYCHOLOGY 2.0

Opportunities and challenges in psychological assessment

To say that the new technologies will facilitate psychological assessment is nothing new. For several years various authors in our country have been working intensively and extensively on both evaluation and intervention online (Baños, Guillén, García-Palacios, Quero, & Botella, 2013; Botella, Quero, Serrano, Baños, & García-Palacios, 2010), it being possible to carry out follow-up of patients in consultation using ICT.

In the field of psychological assessment, applications of the Web 2.0 that allow users to "provide information" will favour the creation of a twofold scenario in which psychologists must play an important role. We are referring to both individual assessment through resources that enable us to gather information *in situ* on many variables, increasing the reliability and ecological validity of the data provided by the user, and also to the assessment of large volumes of data that allow the study of human behaviour at macro and micro levels simultaneously.

In the first scenario, we would have the individual assessment. Thanks to the widespread use of the smartphone, we have the possibility to evaluate many variables *in situ* and in context, obtaining an "authentic assessment" of them. To the traditional media (techniques of pencil and paper, online application of tests, observation and interviewing), we can add the information that we can collect using specific mobile applications (apps, hereinafter) on variables such as blood pressure, cardiac rhythm, or temperature as well as moods, obsessive ideation, behaviour registration, etc. These apps allow the continuous collection of data over time, making it possible to aggregate this data, evaluate it and continuously monitor the behaviour being measured. They also enable sampling of behaviours, self-reports of any kind and all types of analysis related to "geopositioning" and other data that can inform us of the time, duration and intensity of different types of activities that the practitioner may consider relevant for evaluation. All of this, moreover, will be carried out using a device like the smartphone, which the users use in their daily lives, and which will allow us to integrate data easily at the same time that they are being generated and in the specific contexts to be decided, thus avoiding many measurement biases. Therefore, the application of mobile devices to evaluate certain variables, behaviours, thoughts or emotions, not only increases the ecological validity, as they are gathered in the context in which they occur and are informed by the users themselves, but it also results in more reliable measurements. The intriguing article, *Smartphone Psychology Manifesto* (Miller, 2012), compares some common methods of collecting data for evaluation with the possibilities that a mid-range smartphone permits, and the combined use of both methods is suggested.

The smartphone will be a central device for the psychological evaluation that can enable a multi-method, multi-perspective and multi-informant evaluation because the technology will allow us to integrate information from various informants (e.g., parents, teachers, co-therapists, carers, professionals from other specialties) in a much more simple and "real-time" way than could be done to date, adding information that before was often lost in the day-to-day events of both patients and professionals.

But the smartphone as such is simply a device on which different programs or apps can operate. As well as these apps, we must bear in mind that various gadgets are gradually being incorporated, "add-ons" that will allow us to make the most of the latest generation of phones. The number of mobile applications is growing continuously and administrations such as the British National Health Service already provides a group of apps that have been tested and ready for "prescription" in the health sector, once experts have evaluated their usefulness and safety for clinical use. Many of the apps included in the catalogue of the National Health Service are dedicated to addressing common problems and situations in the professional field of psychology.

If from the perspective of a psychologist conducting an assessment, the use of apps and other technological resources provides as interesting and useful as the

possibilities described above, the benefits presented in relation to the individual that is being evaluated are no less important. On the one hand, the widespread use of mobile phones in everyday life facilitates the data collection, which using the traditional method is at least an effort of memory, because the user can not always record the information at the exact time it occurs. On the other hand, the possibility of obtaining aggregated data usually in graphic format allows users to have immediate feedback on their progress, helping to raise awareness of the problem, and promoting their empowerment since they actively contribute to their own assessment and monitoring of the behaviours to be changed (Armayones & Bocanegra, 2011).

In the second stage, and beyond the strict scope of the individual evaluation, we highlight the possibilities that what is known as Big Data will offer in fields such as psychometrics.

Big Data ("Grandes Datos" in Spanish) is the term that has been coined to refer to the management of huge amounts of information that may be available to government institutions, companies and researchers. The term refers to a set of techniques and methods of storing and using data, but it is not difficult to see its possibilities in the field of psychology and particularly psychometrics.

Thus, the possibility of having data available from all kinds of devices, both smartphones and any other source, will allow the study of human behaviour on a large scale but also in great detail at the same time. Hence, the doors are open to the possibility of a revolution in Psychometrics.

At present, there are studies underway in which Big Data is used for research into depression and internet addiction (Markowetz, Błaszkiewicz, Montag, Switala & Schlaepfer, 2014). For other authors, the incorporation of Big Data in healthcare is simply inevitable for organisational, healthcare and economic reasons and, above all, due to the possibility of generating new knowledge (Hill, Merchant & Ungar, 2013; Murdoch & Detsky, 2013). Our view is that the generation of new knowledge is possible, but this must involve formulating the right questions of the data, both in the field of evaluation and in other areas within and outside of psychology, which cannot be done correctly without adequate training in psychology. Indeed the American Psychological Association (APA) itself considers the Big Data Psychologist to be an emerging professional opportunity for psychologists that are well-trained in methodology, psychometrics and statistics applied to the behavioural sciences, as traditionally taught in the Faculties of Psychology.

Opportunities and challenges in psychological intervention

Telepsychology and the use of ICT in consultation is developing in our country and there is already a considerable number of studies that demonstrate its use in areas such as the treatment of phobias (García-García, Rosa-Alcázar, & Olivares-Olivares, 2011), pain (Nieto et al, 2012; Loreto-Quijada et al, 2014) or anxiety problems (García-García et al, 2011; Baños Guillén, García-Palacios, Quero, & Botella, 2013). Reviews have also been published on this type of treatment, such as the study carried out by Botella et al. (2010), in which excellent conceptual work has been carried out analysing both the advantages and the disadvantages of telepsychology; as well as a future prediction of pioneering studies in our country.

However, if we consider the possibilities offered by the tools of the Web 2.0, we can say that this is a work environment where almost everything is yet to be done. Indeed, work is just beginning in relation to the use of tools for intervention, such as online social networks and apps, many of which have the common feature that they are based on the interaction between users, in a more or less evident way.

Incorporating the tools of the Web 2.0 involves changes of various kinds, going beyond the mere introduction of new technologies in the practitioner's consultation. As has happened in other areas, such as in medicine, the change necessarily involves rethinking the type of relationship established between the practitioner and the users. This is an evolution which, although it may generate initial resistance among some practitioners, is becoming apparent in all areas of society, without representing a threat to the roles, status or professional positions, but an opportunity to collaborate towards some common objectives shared by professionals and users in any type of professional activity.

So from the perspective of Psychology 2.0, the psychology practitioner adopts different roles depending on the objectives and scope of the intervention, whether individually or collectively, in the field of the treatment of psychological problems and in prevention and health promotion.

We believe that, from the perspective of Psychology 2.0, and taking into account both the general characteristics of the Web 2.0 and the type of platform on which it is being developed, the intervention may be of two types: *specific* and *nonspecific*.

By *specific* intervention, we mean intervention that involves direct health care through Web 2.0 tools such as

social networks, blogs, wikis, content managers, apps and any other 2.0 tool (both at the level of direct attention to users and the specialised promoting of social networks, monitoring, exploitation and design of interventions through apps, etc.) For example, specific interventions from a 2.0 perspective would be those in which the psychologist leads online self-help groups, which may in this case have different degrees of supervision; from the level that is almost identical to that of "group therapy", simply acting as a facilitator or merely observing and only participating upon the request of members. Another example is the participation in psychoeducational activities in the field of prevention, in which the role of the psychologist would be to use his or her professional knowledge to select quality online resources that are "prescribed" to participants, at both the collective and the individual level. A further example is the ability to prescribe psychological apps to certain patients, to enable them to monitor various tasks that may have been prescribed by the practitioner and used by the users, as is already being done in other health professions such as nursing (Tuck & Sheets, 2014).

The intervention is *nonspecific* when it involves indirect health care, i.e., it does not involve direct interaction with the patient, but professional psychologists contribute their knowledge to ensure that, for example, an app aimed at treating generalised anxiety takes into account the knowledge that is well established in our discipline, which may seem obvious but it does not seem to be happening, according to the study by Cowan et al. (2013) which analysed 127 apps downloaded from the Apple Store that had been designed for the promotion and monitoring of exercise. The study found that there was a practically nonexistent presence in the apps of constructs of theories that explain change in the field of health (e.g., the health belief model, the transtheoretical model, the theory of planned action and social cognitive theory).

It is clear that no matter how many resources are used, for example, in the development of an app to promote physical exercise as part of a campaign to promote health, it will not be very useful if the people for which it was designed simply do not use it, or start to use it and then stop after a short time. In this sense, the study of the factors that promote adherence to online interventions (Cugelman, Thelwall, & Dawes, 2011), generating online trust, persuasive online design (Fogg, 2009), online influencing (Poirier & Cobb, 2012), what is known as the "law of attrition", according to which one of the problems of eHealth interventions, such as the lack of adherence and the consequent abandonment by the users (Eysenbach, 2005), are areas in which the involvement of psychology professionals can contribute significantly to the success of these applications.

Opportunities and challenges in psychological research

As we noted in the section devoted to assessment, the potential of data exploitation from Big Data techniques and methodologies is opening up great possibilities in the field of research on human behaviour. Thus, the possibility of obtaining data from different devices at the same time that they are being generated and which can be collected automatically, may revolutionise fields such as psychometrics (Markowetz et al., 2014), both at the level of individual study and in the field of public health (Murdoch & Detsky, 2013). We are at a stage that enables us to have a huge amount of contextualised data available continuously, with minimal dependence on social desirability and memory, and that allows the identification of patterns (but also the appearance of spurious correlations), modelling and maximum personalisation. The real power of this amount of data is the accuracy it can provide.

Another area of work in the research will be to analyse the extent to which theories and intervention models –which were developed before the widespread use of mobile devices that we know today– still have the same validity in a different social context to the one in which they were defined and validated (Riley et al., 2011). For example, will we have theoretical models capable of analysing dynamic data and even reformulating themselves on the basis of the statistical evidence can be drawn from them? To what extent are we able to consider the communicative potential of the Web 2.0? This is an exciting opportunity to review the current models and variables that currently frame our research.

The new role of patients, citizens, in the care and management of their health will not only provide new sources of data, but also research questions regarding the effect that this type of user involvement may have on different psychological variables. Thus, analysing the psychological effect that actively participating in a social network online –specialising in a particular type of chronic disease or disorder– may have on a patient, family, association, etc., is already a field of work that is showing good results, various authors drawing conclusions on the positive benefits of involving patients in social networks concerning different types of disorders: chronic pain (Becker, 2013), sexually transmitted

diseases (Gabarron, Serrano, Wynn, & Armayones, 2012), depression (Bergman & Haley, 2009) rare diseases (Dellve, Samuelsson, Tallborn, Fasth, & Hallberg, 2006), diabetes (Greene, Choudhry, Kilabuk, & Shrank, 2011) and it even being confirmed that for those who do not actively participate, i.e., those who do not produce content (do not write) but only read what their peers say, it also improves their level of empowerment (van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2008).

The scope of the research also has great challenges ahead. For example, the ability to influence the emotional state of more than half a million people by filtering the type of news they received in their Facebook profiles (Kramer, Guillory, & Hancock, 2014), and showing that those who received positive messages tended to share more positive than negative messages and vice versa, was a huge scandal due to the absence of informed consent by the participants. To think that, among the 689,000 people who received negative messages, there could be people with a high degree of vulnerability, who were not informed of the manipulation to which they were being subjected, moves us all to reflect on the effect that these kinds of practices may have on the mental health of the involuntary participants.

Opportunities and challenges in professional development

The article *Smartphone Psychology Manifesto* (Miller, 2012) reflects on the fact that in 2025, when today's psychology students will mostly be in their mid-thirties, it is calculated that there will be more than five billion people on our planet who use mobile devices, with many more features than we can imagine at present.

Although an effort is being made in the training of undergraduates and graduates in psychology to incorporate the new technologies, it can be anticipated that the needs of professional psychologists in this area will continue to grow. For example, they will have to incorporate the following features into their academic curriculum, especially at post-graduate level: how to stimulate a social network (the role of community manager); how to exploit data generated by Big Data methodologies; the designing, implementing and evaluating of interventions carried out through apps; improving the usability of health applications; developing health literacy actions; understanding what kinds of effects the use of social networks may have on a patient/client, among many others.

The role of the professional associations in the continuous professional development and updates on issues that cannot be incorporated in the short term to formal university education, due to their novelty, immediacy, and (why not say it?) their "fashionableness", may be key, and it may also represent an opportunity for the associations to channel the demands of professional development for practitioners, working closely with the universities and other training centres. Many practitioners face everyday situations related to the use of 2.0 tools, and it is necessary that we all develop strategies together to ensure that these situations are addressed with the maximum guarantees and that the best service is provided to the citizens.

CONCLUSIONS

The evolution from the industrial society to the knowledge society is not part of an era of change, but rather it is a true change of era (Lorca & Jadad, 2009) and one that the profession of the psychologist cannot ignore. At a time when the supply of online services of all kinds, is already a reality in continuous development, it is not only appropriate to continue working on the evaluation of online devices of any kind that are to be incorporated into therapy, a task that has already begun to be carried out by different research groups and within the COP [Spanish Psychological Association] itself (Ramón, 2013), but also it is necessary to go further and incorporate into the equation the new role that patients and practitioners are adopting in a society in which the emergence of the Web 2.0 has greatly changed the flow of information, the communication strategies of organisations, the practitioner-patient relationship and, ultimately, has placed us before a "new citizen" who wishes to manage everything possible both regarding their health and their illness, and whom the professional psychologist can easily accompany if he or she has sufficient technological expertise, but also an open attitude to the online tools at his or her disposal. We agree with Ramón in that information is needed on the impact of the new technologies in professional practice, and that "their total prevalence is a matter of time" and, therefore, we believe that prospective analyses such as this one we have tried to carry out, mostly based on evidence and applications that are already a reality, can help us if not to find answers, at least to continue asking questions, which are the basis for the advancement of any discipline.

Let us note, finally, that we do not consider that the concept of Psychology 2.0 is a distinct entity from psychology itself, naturally. The "suffix" 2.0 will eventually disappear as will the "e" in the concept of

"eHealth", while both the technological advances and the social changes that occur will mean that no such distinction will be possible. The view of Psychology 2.0 is intended only to highlight some basic features of how the Web 2.0 technologies can help us both to adapt to the needs of patients, associations and other professionals in a society that is evolving very rapidly, and to continue working, researching and teaching about how 2.0 Psychology can contribute to improving the health and quality of life of our patients, users and citizens in general, both in the results of the intervention and in obtaining new knowledge that will allow us to progress in the research and validate –or not validate (as the case may be)– the results rigorously.

Without a doubt, both the opportunities and the challenges mentioned here should not so much preoccupy us, as occupy us, and the steps in order to do this must always be firm, no matter how small they are. To borrow and adapt a phrase from the Catalan poet Martí i Pol, we could say that everything is possible and everything is yet to be done in Psychology 2.0.

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