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Acceptability of internet-based interventions for depression in Indonesia

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ABSTRACT

Background: In Indonesia, internet-based interventions may represent a promising strategy to reduce the mental health gap given that the level of internet usage in the country continues to increase. To check the acceptability of internet-based interventions, this study investigates factors that contribute to the use of internet-based interventions for depression in Indonesia.

Method: The survey was conducted online and had 904 participants recruited from specific social networks on mental health and general social media (Mean age = 27.07, 50.22% females). The three dependent variables were (1) behavioral intention to start using internet-based interventions for depression, (2) preference to use it as a substitute for regular treatments and (3) preference to use it to complement regular treatments. The predictor variables included sociodemographic characteristics, perceived mental health conditions, personal situational characteristics, personal innovativeness toward online services, and depression level.

Results: A large majority reported to be open to using internet-based interventions for depression (73.7%), as well as to use it as a substitution (73.3%) or as a complementary (73%) to regular treatments. Personal innovativeness toward online services was the strongest significant predictor for all types of use, even when corrected for current depression level. When added to the analyses separately, depression level was the second strongest predictive factor for all dependent variables.

Conclusion: The majority of Indonesians showed openness to use internet-based interventions for depression. To increase the adoption of internet-based interventions for depression, it is important to first promote internet usage to more people across the country, especially for those who are currently depressed.

1. Introduction

As a leading cause of disease burden, depression affects approximately 4.4% of the world population (Ferrari et al., 2013), and approximately 5% of the population (equal to > 10 million) in Indonesia (Ferrari et al., 2013). There is a great imbalance between the number of depression cases and the availability of mental health professionals in low-middle income countries (LMICs), including in Indonesia (World Health Organization, 2015).

In the mental health Gap Action Programme (mhGAP), the World Health Organization (WHO) stated the importance of providing mental health interventions that can be widely distributed (WHO, 2008). The internet may be a potential medium to deliver low-cost interventions widely (Napolitano et al., 2003), which generally known as e-health. Within the field of clinical psychology, there is a form of e-health called internet-based interventions which refers to treatments that are mainly delivered via the internet, with at least some therapeutic tasks delegated to the computer (Andersson and Titov, 2014).

Many clinical trials conducted in high-income countries (HICs) have shown that internet-based interventions are effective for various mental health conditions, including depression (Andersson and Cuijpers, 2009; Andrews et al., 2010). Internet-based intervention have also been evaluated as an acceptable form of psychological treatment in Australia (Gun et al., 2011; Spence et al., 2011). However, despite its potential, internet-based interventions have rarely been studied in LMICs, and no research on this topic has been reported from Indonesia (Arjadi et al., 2015).

In Indonesia, internet-based interventions may pose as a promising strategy to reduce the mental health gap, since the level of internet

Abbreviations: AVE, average variance extracted; B·INT, behavioral usage intention; COMP, complementary use; DIST, distance to mental health service facilities; EDU, education level; HIC, high income country; HIST, history of mental health service usage; IDS-SR, Inventory of Depressive Symptomatology-Self Report; IIAQ-ID, Internet-based Interventions Acceptability Questionnaire-Indonesia; LMIC, low-middle income country; mhGAP, mental health Gap Action Programme; P·INNOV, personal innovativeness toward online services; PERC·MH, perceived mental healthiness; PERC·MV, perceived mental health vulnerability; SES, socioeconomic status; SUBS, substitutive use

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usage in the country is expected to increase to 50% of the population (120 million people) by 2018 (Asosiasi Penyedia Jasa Internet Indonesia, 2015; Noviandari, 2014). On the other hand, implementing internet-based interventions as a new type of mental health service particularly for depression in such country may also be challenging. For example, a recent study done in India, another LMIC, stressed the importance of evaluating the contextual acceptability and feasibility prior to the implementation (Chowdhary et al., 2016). Although that study was done for a face-to-face treatment context, the approach is highly relevant in terms of implementing various psychological treatments in LMICs. Therefore, prior to the implementation, it is important to examine the acceptability of internet-based interventions for depression among Indonesian population by investigating factors that contribute to the use of it.

The most widely used theory of technology acceptance is the Technology Acceptance Model which states that the behavioral intention to use new technology is determined by the perceived ease of use (the degree to which a person believes that using a particular system would be free from effort) and the perceived usefulness (the degree to which a person believes that using particular system would enhance his or her job performance) (Davis, 1989). Previous studies on the Technology Acceptance Model on e-health in LMICs showed that both perceived ease of use and perceived usefulness were important factors of e-health acceptance in the context of mental health (e.g. (Hoque et al., 2017; Sobowale et al., 2016). Those studies provide evidence that e-health is acceptable to potential users in LMICs.

Next to this perspective on the acceptability of the technical system, it is also considered important to investigate the acceptability from an individual variables perspective (Arning and Ziefle, 2009; Berry et al., 2016). These individual variables may be crucial in predicting the actual use of such interventions for mental health problems in LMICs. We will use this perspective for the current study. The relevant individual factors reported from various studies involve sociodemographic characteristics (e.g. Dickerson et al., 2004; Mead et al., 2003), perceived health conditions (e.g. Rai et al., 2013; Wilson and Lankton, 2004), personal situational characteristics (e.g. Duplaga, 2012; Mead et al., 2003), and psychological characteristics related to technology (e.g. Huang, 2013; Rockmann and Gewald, 2016). A recent study (Rai et al., 2013) in the context of mobile health service as one type of e-health reported results on how those various factors can predict the acceptability of mobile health service. The study (Rai et al., 2013) also proposed the importance of not only assessing those factors to determine the behavioral intention to start using mobile health service, but also to determine the assimilation (awareness and frequency level of using it), and the preferences to adopt it as a substitutive use (replacement for regular face-to-face treatments) and a complementary use (addition to regular face-to-face treatments). In the results, they reported that some predictive factors for the behavioral intention to start using mobile health service and for the preferences to use it as a substitutive use and a complementary use were different (Rai et al., 2013). Assimilation is not relevant in the current study because internet-based intervention is rarely found and used in Indonesia at the moment. More than 95% of our participants reported that they are not aware of the availability of any internet-based interventions for mental health problems, and those who are aware indicated they were referring to counseling via email or chat, and internet-based interventions provided in countries outside Indonesia.

In this current study, we report the general acceptability of internet-based interventions for depression in Indonesia and investigate factors that predict the use of it. The predictive factors include sociodemographic characteristics (age, sex, education, and socioeconomic status), perceived mental health conditions (perceived current mental healthiness and perceived mental health vulnerability of severe mental health problem in the future), personal situational characteristics (distance to mental health service facilities and history of mental health service usage), and psychological characteristics related to technology (personal innovativeness toward online services which represents the degree of one's willingness to try new online services). Furthermore, since we focus on the topic of internet-based interventions for depression in this study, depression level will be added as an additional predictive factor. We examine how all of these factors contribute to the Indonesians' intention to start using internet-based interventions for depression as well as to adopt it both for substitutive use and for complementary use to regular treatments.

2. Methods

2.1. Participants

The survey was conducted online. The first page of the survey was viewed by 1622 individuals, and 904 participants (55.73%) subsequently completed the survey. The participants' age ranged from 16 to 61 years ($M = 27.07$, $SD = 7.06$) with 454 females (50.22%). Based on the participants' score on the Inventory of Depressive Symptomatology-Self Report (IDS-SR), and according to the internationally used cut-off of 14 as an indication of being depressed (Rush et al., 2003), 43.6% participants were categorized as not depressed (total score 0–13), 31.4% were mildly depressed (total score 14–25) and, 25% were moderately to very severely depressed (total score 26–84).

2.2. Procedure

The data were collected via Qualtrics, an internet-based platform for surveys). We recruited participants via invitations on our website (www.actandfeel.com), two other websites on mental health, online forums on mental health, social media, and by word of mouth. Participants provided consent at the beginning of the online survey page by ticking an “agree” button to indicate their agreement to join the study.

2.3. Ethical approval

The ethical approval for this study was obtained from the Tarumanagara University Human Research Ethics Committee, Indonesia (project number PPZ20142001).

2.4. Measures

2.4.1. Internet-based Interventions Acceptability Questionnaire-Indonesia (IIAQ-ID)

This research followed the line of research by Rai et al. (2013) and thus used the items from that study, aggregated into a 20-item measure called the “Internet-based Interventions Acceptability Questionnaire-Indonesia” (IIAQ-ID). The final questionnaire was derived from discussion within the authors in two languages (English and Bahasa Indonesia). The final questionnaire was then reviewed by three bilingual Indonesian clinical psychologists to check the cultural expression.

For the dependent variables, there were 3 items to measure behavioral intention to start using internet-based interventions for depression (e.g. “Assuming I have access to internet-based interventions for depression, I intend to use it”), 3 items to measure preference to use it as a substitute for regular treatments (e.g. “I am willing to use internet-based interventions for depression to obtain relevant advice instead of going for a regular face-to-face treatments”), and 3 items to measure preference to use it to complement regular treatments (e.g. “I am willing to use internet-based interventions for depression to obtain relevant advice in addition to a regular face-to-face treatments”). For each item, participants were asked to rate on a 7-point Likert scale from 1 “strongly disagree” to 7 “strongly agree” (score 4 is indicated as neutral). If the mean item-score on the three items of each dependent variable scale was above 4 (or ≥ 13 in total), this was regarded as a positive attitude toward the use of online interventions for depression.