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Perspectives in  
**PSYCHIATRIC CARE**

**Attitudes and stigma toward mental health in nursing students: a systematic review**

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## ABSTRACT

Purpose: This systematic review seeks to ascertain whether mental health-specific education reduces stigmatizing attitudes in nursing students.

Design and Methods: A systematic review of the literature was performed.

Findings: Thirteen studies met the inclusion criteria. Most of the results show an improvement in attitudes towards mental health, both in theory and clinical experience, but a greater improvement towards these stigmatizing attitudes was observed in clinical placements than in theory.

Practical implications: Mental-health-specific training seems to improve perceptions towards mental health. Clinical placement underpins theory, leading to a decrease in negative attitudes and stigma regarding mental health.

Keywords: attitudes, higher education, nursing, mental health, systematic review

## INTRODUCTION

1  
2  
3 Mental illness currently affects one in every three Europeans, making it one of  
4 the main challenges facing mental health care. Despite the high prevalence of  
5 mental health problems, people presenting with this illness are subject to  
6 discrimination and exclusion (World Health Organization, 2013) brought on by  
7 negative and stigmatizing attitudes in society (Corrigan & Rao, 2012; European  
8 Social Network, 2011).

9  
10 Likewise, various studies confirm that health care professionals also acquire  
11 negative and discriminatory attitudes towards mental health, which can  
12 determine the treatment and quality of care given to people affected by a mental  
13 health problem (Chambers et al., 2010; Nordt, Rossler, & Lauber, 2006; Ross &  
14 Goldner, 2009). Similarly, nursing, a specialization that is particularly  
15 undervalued compared to other health care fields, is also prone to stigmatizing  
16 attitudes in mental health care (Edward et al., 2015; Song, 2015; Walsh, 2015).  
17 These negative attitudes can be passed on to nursing students during their  
18 higher education (Fokuo et al., 2016; Song, 2015). However, these students  
19 believe that the knowledge they acquire over time steers them towards a care  
20 for, and an understanding of, the emotions manifested by the mentally ill  
21 (Ewalds-Kvist, Högberg, & Lützén, 2012). Students that have direct contact with  
22 people with mental health problems regard it as highly beneficial, as the  
23 experience gives them a better understanding of the educational interventions  
24 (Dawood, 2012) and the attitude necessary for delivering adequate health care.  
25 All this facilitates a shift towards a more positive attitude in nursing students,  
26 with a greater predisposition towards, and a less apprehensive view of, mental  
27 health (Happell & Gaskin, 2013; Romem, Anson, Kanat-Maymon, & Moisa,  
28 2008; Yamauchi et al., 2011).

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3 Given the importance of training specifically aimed at a paradigm change  
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5 towards the acknowledgement, social inclusion, and empowerment of people  
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7 with a mental health problem, it is considered pertinent, in both theory and  
8  
9 clinical placement, to adopt an approach that underscores a type of nursing  
10  
11 care that fosters knowledge, skills and attitudes in order to lessen stigmatizing  
12  
13 interventions (Halter, 2008; Hanafiah & Van Bortel, 2015; Serafini et al., 2011).  
14  
15 These all form the mainstay and starting point of global and holistic nursing care  
16  
17 (Garcia, Arana, Cárdenas, & Monroy, 2009; Salazar & Martinez, 2009).  
18  
19 The aim of this paper is to explore nursing students' perceptions of stigmatizing  
20  
21 attitudes towards people suffering from a mental health problem and these  
22  
23 perceptions are more positive when students conclude their university studies.  
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25 To respond to this objective, a systematic review was conducted using the  
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27 PRISMA guidelines and the Cochrane Manual(Higgins JPT, 2011; Liberati et  
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29 al., 2009).  
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## 56 **METHODS**

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3 The questions for this research were generated in accordance with PICO  
4 questions (Table 1), defining as the aim of this study: to analyze whether  
5 nursing students perceive and/or hold stigmatizing attitudes towards mental  
6 illness during theory and/ or practical training interventions in the mental-health  
7 nursing module.  
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### 15 **Search strategy**

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18 This review was conducted in accordance with the criteria outlined in the  
19 PRISMA guidelines and the Cochrane manual for systematic reviews (Higgins  
20 JPT, 2011; Liberati et al., 2009).  
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23 A search was carried out using three online databases, PubMed, Scopus and  
24 Cochrane Plus, that are considered the ones that include high impact  
25 publications in the health field. The search was limited to the years 2006 to  
26 2016 inclusive.  
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34 The following terms were selected for the search: (1) nursing students, (2)  
35 mental health, (3) stigma, (4) attitude, (5) education, and combined with the  
36 Boolean operator "AND" of: 1 AND 2 AND 3, 1 AND 2 AND 4, 1 AND 2 AND 5,  
37 and "OR": (1 AND 3) OR (1 AND 4).  
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### **Inclusion and exclusion criteria**

The inclusion criteria of this review were: (1) papers published between 2006 and 2016 inclusive, (2) quantitative and qualitative studies, (3) studies that evaluated stigmatizing attitudes towards mental health using validated assessment instruments, (4) studies that assessed nursing students before and/or after theory and/or clinical placement (5) and mental health-specific training in university nursing studies.

Papers excluded from this review were: (1) studies published outside the selected time frame, (2) research not involving pre- and post-evaluation of theory and/or clinical placement, (3) training provided outside mental health-specific nursing studies, (4) reviews, editorial opinions, conference abstracts, (5) articles not published in English.

### **Search outcomes**

The papers were screened using Excel 2013 software, after which the relevant documents were worked on using the Mendeley online review manager.

After duplicate elimination, a single researcher retrieved and screened the titles and abstracts of 1,013 papers. From this selection, three researchers reviewed 48 full-text independent papers, 13 of which (12 quantitative studies and 1 qualitative study) met the criteria for this systematic review. (Figure 1)

The relevant information gleaned from each paper was: type of study, study objective, number of participants, assessment instruments used, methodology, and results/conclusions from each study.

### **Analysis and Quality Assessment**

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3 Nine of the thirteen studies were quasi-experimental, longitudinal, descriptive,  
4 and prospective.  
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7 Three were analytical cohort group studies and one was a qualitative study.  
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9  
10 The papers were evaluated separately and independently by three authors to  
11 ensure complete consensus on whether the studies met the inclusion criteria.  
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#### 14 **Date of retrieval and synthesis**

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16 The following information was culled from each of the studies included in this  
17 systematic review: year of publication, to ensure it came within the time frame of  
18 the review; sample size, to gauge its representativeness; type of study design,  
19 assessment instruments and results, to assess the characteristics in which the  
20 stigmatizing attitudes and their subsequent results were analyzed. (Tables 2  
21 and 3)  
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## 58 **RESULTS**

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### Characteristics of the studies included

The identification and screening process yielded thirteen papers (described in Tables 2 and 3): twelve quantitative studies and one qualitative study, all of them published in the period from 2006 to 2016 inclusive, as described in the inclusion criteria.

The sample size of the studies ranged between 39 participants and 784 in the largest sample. The most relevant age group was between 18 and 29 years.

Women made up between 85% and 90% of the participants.

The design characteristics of the quantitative studies were: nine quasi-experimental, three analytical cohort, as well as one exploratory-descriptive qualitative study.

Of the nine quasi-experimental studies, one recorded attitude changes in three phases: before commencement of nursing university studies, after completion of theoretical education, and after completion of clinical placement (Henderson, Happell, & Martin, 2007). Three of the quasi-experimental studies focused on attitude changes prior to commencement of theory and after completion of clinical placement (Happell, Moxham, & Platania-Phung, 2011; Happell & Platania-Phung, 2012; Hastings, 2015), and five analyzed these changes prior and subsequent to placement (Gil, dos Santos, & Loureiro, 2016; Happell, 2008a, 2008b, 2009; Romem et al., 2008). Two of the three cohort studies analyzed attitude changes and stigma reduction before commencement and after completion of theoretical education, in which one group took a traditional course, and the other a lived experience course (Byrne et al., 2014; Happell et al., 2014). The third study also investigated attitude changes attached to stigma in three phases: before commencement, after completion, and at three months

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3 post-training, in both the intervention group and the control group (Moxham et  
4 al., 2016).

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7 The one qualitative study included in this systematic review examined the  
8 process of change in the university students' attitudes and perception during  
9 their mental health-specific training period (Yamauchi et al., 2011).

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12 The studies were developed in various countries, nine of them in Australia.

### 13 14 15 16 17 **Characteristics of the evaluation instruments**

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20 The surveys "Psychiatric/Mental Health Clinical Placement Survey for First Day  
21 of Placement" (pre-placement) and "Psychiatric/Mental Health Clinical  
22 Placement Survey for Last Day of Placement" (post-placement)" were the most  
23 representative instruments, as they have been used in various studies,  
24 including the papers selected for the present study (Happell, 2008a, 2008b,  
25 2009; Hastings, 2015).

26  
27  
28 "Mental Consumer Participation Questionnaire" (Byrne et al., 2014), which was  
29 subsequently modified to generate "Questionnaire after psychometric evaluation  
30 of the baseline data" (Happell et al., 2011).

31  
32  
33 The following instruments were each used on one occasion: "The Nurses Self  
34 Report" (NSR) (Henderson et al., 2007), "The Clinical Placement Survey  
35 (preplacement and postplacement)" (Happell & Platania-Phung, 2012), "The  
36 Attribution Questionnaire-27 (AQ-27) (Romem et al., 2008), "Opinions on  
37 Mental Illness" (OMIS) and "Inventory of Beliefs about Mental Illness" (ICDM),  
38 (Gil et al., 2016), and "Social Distance Scale" (SDS) (Moxham et al., 2016).

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41 The instruments included in the present study mainly analyzed the content  
42 related to change in students' attitudes and stigma towards people with a  
43 mental health problem, in the different phases of the mental health nursing  
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3 training period, as well as the academic and professional guidance that may  
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5 lead to this change process.  
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### 10 **Reliability and validity of assessment instruments**

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13 Seven of the studies described reported the validity criteria of the instruments  
14  
15 used as an assessment instrument. Validity was confirmed through “expert  
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17 groups” and pilot testing (Gil et al., 2016; Happell, 2008a, 2008b, 2009;  
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19 Hastings, 2015; Henderson et al., 2007; Moxham et al., 2016), whereas the  
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21 remaining studies did not report these criteria (Byrne et al., 2014; Happell et al.,  
22  
23 2014, 2011; Happell & Platania-Phung, 2012; Romem et al., 2008).  
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27 Eight of the studies reported the reliability of the assessment instruments, which  
28  
29 was considered to show acceptable values in the studies by Henderson et al.  
30  
31 (2007), Happell et al. (2011) and Moxham et al. (2016), with values of: 0.8525  
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33 (Henderson et al., 2007) ,  $\geq 0.7$ (Happell et al., 2011), and of 0.75 to  
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35 0.90(Moxham et al., 2016), respectively.  
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39 Some of the instruments were variable and questionable, with Cronbach`s  $\alpha$   
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41 from 0.5 to 0.92 for the instrument subscales (Happell, 2008a, 2008b, 2009;  
42  
43 Hastings, 2015),  $\alpha$  Cronbach from 0.55 to 0.87 for the instrument subscales  
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45 (Romem et al., 2008). These results did not indicate which subscales of each  
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47 instrument were acceptable values or unreliable (George & Mallery, 2010).  
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51 The other four studies included no information on the reliability of the  
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53 assessment instruments (Byrne et al., 2014; Gil et al., 2016; Happell et al.,  
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55 2014; Happell & Platania-Phung, 2012).  
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### 59 **Evaluation process in attitude changes towards stigma**

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3       – **Studies assessing attitude changes pre-theory and post-placement**  
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5 The findings concerning completion of training pointed to a positive change in  
6 mental health nursing students' attitudes towards, and perception of, people  
7 presenting with a mental health problem (Yamauchi et al., 2011). Indeed, the  
8 students improved their skills and knowledge for managing mental illness  
9 (Henderson et al., 2007), and showed less apprehension towards unpredictable  
10 behaviors (Happell & Platania-Phung, 2012). Similarly, the students reported no  
11 significant changes when assessing the patient's management of his or her own  
12 illness process (Happell et al., 2011). By contrast, Hastings (2015) highlighted  
13 that negative societal stereotypes and less-than-upbeat feelings towards people  
14 suffering from a mental health problem remained steady, albeit with a partial  
15 improvement, upon completion of the placement (Hastings, 2015).  
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30       – **Studies assessing pre- and post-theory or clinical placement**  
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32 The studies focusing on insights into attitudes before commencement and after  
33 completion of clinical placement highlighted a significant positive change in  
34 attitudes and confidence towards people with a mental health problem (Happell,  
35 2008a, 2008b), suggesting a reduction in stereotypical beliefs and anxiety  
36 regarding contact with them (Happell, 2008b) as well as a prevalent  
37 compassion, responsibility and willingness to help, and less fear, anger, and  
38 segregation (Romem et al., 2008). Attitudes of acceptance, tolerance, and  
39 social constraints improved, although there was no change in the perception of  
40 incurability and unpredictability of people with mental health problems (Gil et al.,  
41 2016). Two of the three cohort studies assessing pre- and post-theory change  
42 in attitudes and stigma towards the mentally ill showed a steady improvement  
43 (Byrne et al., 2014), less anxiety and a preparedness to deliver mental health  
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3 care (Happell et al., 2014). The third study, which analyzed this from the pre-  
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5 and post-clinical placement perspective, highlighted positive change that  
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7 remained steady three months after the completion of the placement (Moxham  
8  
9 et al., 2016). Thus, these studies showed an improvement in attitudes and a  
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11 reduction in stigma surrounding mental health in lived-experience learning.  
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## 58 **DISCUSSION**

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3 The aim of this systematic review was to investigate the influence of theory  
4 and/or clinical placement on positive change in attitudes and stigma attitudes  
5 towards mental health in university nursing students undertaking a mental  
6 health-specific course.  
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12 According to the reviewed literature, no systematic review published in the last  
13 five years has analyzed exclusively the objective of the present study. Even so,  
14 some reviews have assessed stigmatizing attitudes towards mental health in  
15 nursing students and their relation with future professional nurses (Happell &  
16 Gaskin, 2013), and some have detected observed improvements in attitudes  
17 towards, and interventions in, mental health in clinical placements (Happell, B.,  
18 2015).  
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28 Given the dearth of literature, this current systematic review specifically studies  
29 the positive change of stigmatizing attitudes towards mental health.  
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### 35 **Characteristics of the studies**

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37 The studies under analysis are characterized mostly for being quasi-  
38 experimental, which use different types of instruments, making it difficult to  
39 compare their results (Higgins JPT, 2011).  
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44 However, insofar as the objectives of this systematic review are concerned, the  
45 instruments analyze the characteristics under study herein, namely  
46 stereotypes, negative attitudes towards people with a mental health problem,  
47 the extent to which nurses feel prepared to manage this type of illness, and the  
48 positive change produced by learning in clinical placements in the field of  
49 mental health (Byrne et al., 2014; Gil et al., 2016; Happell, 2008b, 2008a, 2009,  
50 Happell et al., 2014, 2011; Happell & Platania-Phung, 2012; Hastings, 2015;  
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3 Henderson et al., 2007; Romem et al., 2008). This is particularly borne out in  
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5 attributes associated with authoritarianism, benevolence, ideology in mental  
6  
7 health, social constraints, and interpersonal ideology (Gil et al., 2016) in  
8  
9 addition to the extent to which people manifest a desire to distance themselves  
10  
11 from people with a mental health problem (Moxham et al., 2016).  
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14 The results of some studies show less optimistic feelings (Hastings, 2015) and  
15  
16 moderate positive change (Gil et al., 2016) in the attitudes under study.  
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19 The instruments most widely used in the selected papers were “The Psychiatric  
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21 Mental Health Clinical Placement Survey for First Day of Placement” and  
22  
23 “Psychiatric Mental Health Clinical Placement Survey for the Last Day of  
24  
25 Placement”, which point to an improvement after the clinical placement  
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27 (Happell, 2008a, 2008b, 2009).  
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30 However, one of the studies shows less change in attitudes towards mental  
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32 health, despite the use of the same instrument (Hastings, 2015). The way in  
33  
34 which the study was explained verbally and the fewer participants included  
35  
36 might have influenced the results. None of the studies describes the verbal  
37  
38 explanation and data collection procedures. Happell's studies took place in  
39  
40 Australia, while Hastings' was done in the United States. Hence, different  
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42 sample locations could influence the type of response, suggesting that the  
43  
44 results may not be generalizable and comparable.  
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49 The favorable assessment is borne out in the results concerning the  
50  
51 improvement in the change of attitude in the sample corresponding to an  
52  
53 intervention group. This highlights that a learning method favoring proximity  
54  
55 between students and life experiences has more profound (Byrne et al., 2014)  
56  
57 and lasting benefits in the months subsequent to the study (Moxham et al.,  
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3 2016). This is also shown when theory is qualitatively analyzed (Yamauchi et  
4  
5 al., 2011).

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8 The two studies included in the systematic review that used the "Mental  
9  
10 Consumer Participation Questionnaire" show consistent results in meeting the  
11  
12 objective of the study, with positive change in attitudes towards mental health  
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14 (Byrne et al., 2014; Happell et al., 2011). However, the different sample size of  
15  
16 each study makes it difficult to compare between the two in terms of the  
17  
18 precision of the result estimations. (García-García, Reding-Bernal, & López-  
19  
20 Alvarenga, 2013).

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23 Further, differences were observed between the size, age and gender of the  
24  
25 sample across the studies. The wide variation in the number of participants in  
26  
27 each study, from a small sample (Happell et al., 2011; Moxham et al., 2016) to  
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29 a large one (Happell, 2008a, 2008b, 2009) suggests that a comparison between  
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31 studies is scarcely representative or statistically significant. Particularly  
32  
33 noteworthy in this context is the cohort group study in which the control group is  
34  
35 made up of half the population, as compared with the experiential group  
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37 (Happell et al., 2014). This should be taken into account when assessing its  
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39 results and conclusions, which could affect the representativeness and practical  
40  
41 significance in accepting the validity of the study hypothesis. Age and gender  
42  
43 were consistent across all the studies, with the most prevalent age ranging from  
44  
45 18 to 29 years, and women forming the majority of the study population in most  
46  
47 of the papers reviewed. This confirms that the age of most university students is  
48  
49 within the most frequent age range in other university studies (OCDE, 2014),  
50  
51 reflecting the historical trend of women making up the majority of nursing  
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53 professionals (Arroyo, 2011).  
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3 None of the selected papers included contextual factors in the study samples,  
4  
5 such as whether the participants had had previous contact, either professionally  
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7 or personally, with any type of mental health problem, which may provide new  
8  
9 study perspectives in relation to these variables.  
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### 14 **Content analysis**

15  
16 It should be noted that theoretical knowledge is relevant in driving change in the  
17  
18 general manifestation of stigma and negative stereotypical attitudes. A sounder  
19  
20 theoretical grounding makes students feel better informed and prepared to  
21  
22 develop it in their clinical placement, making them feel more knowledgeable  
23  
24 about mental health pathologies at the end of their mental health nursing course  
25  
26 (Happell, 2009; Hastings, 2015). Consequently, they express more positive  
27  
28 attitudes and beliefs towards mental illness (Happell, B., 2008), using language  
29  
30 that reflects more empathy, interest, and motivation for mental health care  
31  
32 (Yamauchi et al., 2011). However, this should not lead to theoretical idealisms,  
33  
34 which do not guide the student towards a realistic perspective of mental health  
35  
36 problems, and may result in outcomes where there is no evidence of differences  
37  
38 in changes in stigmatizing attitudes (Byrne et al., 2014; Happell et al., 2014).  
39  
40 The results obtained in this review appear to prompt the need to study curricular  
41  
42 planning in greater depth and, likewise, the availability and characteristics of  
43  
44 training places. This would allow researchers to assess whether specific clinical  
45  
46 training spaces share similarities and, if not, to identify those that offer better  
47  
48 learning perspectives, which would yield more insightful data and facilitate a  
49  
50 better breakdown of these differences. According to the studies analyzed in this  
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52 review, the changes observed during clinical placement do not describe specific  
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3 characteristics of the clinical placement spaces, with the exception of the cohort  
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5 studies, where it is mentioned that the intervention group was conducted in an  
6  
7 innovative experiential space (Byrne et al., 2014; Happell et al., 2014; Moxham  
8  
9 et al., 2016).

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12 With a view to future research, it would be interesting to take into account a type  
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14 of training based on the inclusion of learning methodologies in which people  
15  
16 with mental health disorders actively participate in the training of students.

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19 The effectiveness of training is further demonstrated when analyzing the  
20  
21 relevance of the number of placement hours the students undertake, showing  
22  
23 that more theory and clinical placement yields more positive results (Happell,  
24  
25 2009). Hence, the additional interest in analyzing more specifically the most  
26  
27 relevant characteristics of university mental-health-specific curricula, both in  
28  
29 subject matter and in placement hours.

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33 Another interesting area for future research would be to consider experimental  
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35 studies that use instruments to assess whether university nursing students  
36  
37 experience a positive change in their stigmatizing attitudes toward mental  
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39 health.

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42 Similarly, trainers' own experience of mental health during their professional  
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44 career path could provide insights into whether their teaching plans contain  
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46 relevant characteristics for shaping a positive change in attitudes towards  
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48 mental health.  
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## **Reliability and validity of the evaluation instruments**

Only some of the studies included in this research ensured the reliability and validity of the evaluation instruments.

Regarding validity as a necessary characteristic for ensuring the correct measurement of what the construct is intended to measure (Hale, Ch.D., 2014), seven papers confirmed the validity of the evaluation instruments through “expert groups” and a pilot test.

However, some of these studies provided no statistical data to support the validity test of the corresponding questionnaire, making it impossible to guarantee with objective data that these assessment instruments can extrapolate the interpretation of results to different samples or study populations.

Reliability, which is necessary to assess the degree of precision of the instrument through temporal stability and internal consistency (Plichta, S.B., 2013), showed Cronbach’s  $\alpha$  with variable values ranging from 0.9 fins to 0.5, depending on the instrument used. Four of the studies did not report reliability. Because such variability in reliability does not allow us to verify an acceptable consistency in all the instruments in our study, we are not able to confirm that all the instruments studied can guarantee the results obtained in their studies (George & Mallery, 2010; Prieto & Delgado, 2010).

The criteria for the assessment of stigma should be unified, so that for future research those instruments that have identified these characteristics could be used to confirm reliable and comparable results.

## **LIMITATIONS**

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2  
3 The main limitation of this review was conditioned by the very context of a  
4 systematic review, in which the search result ends up limiting and excluding  
5 papers that could provide relevant information and characteristics, but since  
6 they do not meet all the inclusion criteria, their contents are not analyzed in  
7 depth. The results obtained show that the wide heterogeneity in the instruments  
8 contrasted generated different variables that are not homogeneous among  
9 them, leaving the results open to different interpretations. Thus, it was not  
10 possible to perform a meta-analysis of the systematic review itself. Only leading  
11 bibliographic search engines in the field of health were used, although others,  
12 which might have yielded some new research, were omitted for reasons of the  
13 exclusion criteria. In order to ensure high impact publication levels, the papers  
14 included in the present review were in English.

## 31 **CONCLUSIONS**

32  
33 According to the data collected, clinical placements, especially in field of mental  
34 health, are essential for promoting positive changes in student nurses' attitudes  
35 and stigma attitudes towards mental health.

36  
37 These results suggest that, from an academic point of view, there is a need for  
38 rigorous control-centered studies could enable the analysis of negative attitudes  
39 toward people suffering from a mental health problem. Such studies should use  
40 the same assessment instruments and similar population samples, evaluating  
41 curricula that follow lines of comparable content, both in the theory and in the  
42 learning timeframe, as well as in the characteristics of the clinical placement,  
43 including the location and time spent there. This would facilitate the generation  
44 of contrastable and valid results that could determine whether change is long  
45 lasting.

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3 Furthermore, it would also be interesting to consider a reorientation in curricula  
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5 in which, beyond the specific subject of mental health, a global and holistic  
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7 value could be afforded to this type of illness. Finally, given that all students  
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9 taking health-related studies start with the same university education grounding,  
10  
11 such as medicine, psychology, physiotherapy, among others, the indicators  
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13 analyzed in this systematic review could be applied to studies in other health  
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15 fields.  
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### 21 **IMPLICATIONS FOR NURSING PRACTICE**

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23 The scant research into mental health, both in the field of health care and in the  
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25 academic sphere, would be relevant to introduce the knowledge intended for  
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27 mental-health care delivery during university nursing education in an integrated  
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29 and transversal manner, and thus orientate measures of prevention, care, and  
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31 follow-up.  
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For Review Only

• **FIGURES:**

**Fig.1 Identification and selection of studies**

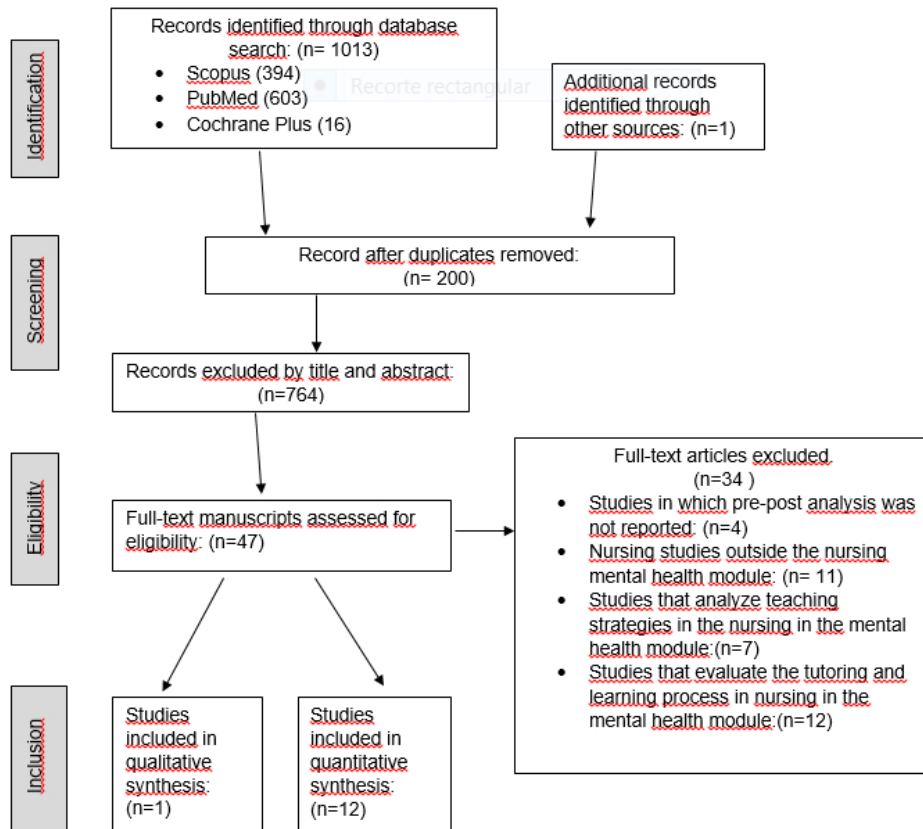


Figure 1

**Table 1. PICO comprehensive review**

<b>Categories</b>	<b>Criteria</b>
<b>Population</b>	Nursing students studying the theory and/or undertaking clinical placements in mental health.
<b>Interventions</b>	Quantitative and qualitative studies. Where the student is assessed before and after theoretical education and / or clinical placement.
<b>Comparator</b>	Use of assessment tools to analyze changes in attitudes and stigma towards people with mental illness.
<b>Outcomes</b>	Ascertain the perception of stigma and attitudes towards people with mental illness and whether any change in these perceptions is observed after the students' university training period in the field of mental health.

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**Table 2. Pre-theory Mental Health (MH) studies – Post- MH clinical practice**

AUTHORS YEAR OF PUBLICATION	SAMPLE	STUDY DESIGN	INSTRUMENTS	MAIN OUTCOMES
(Henderson et al., 2007)	n pre=192 n 1st post=163 n 2nd post=149  Women (90.7%)  Aged ≤20years (52.4%).	Quasi-experimental design Pre-post-post	The Nurses Self Report (NSR) questionnaire, modified from the instrument developed by Gillette et al. (1996). Reliability → Cronbach`s α 0.8525 Validity → the modified version was piloted for two consecutive years before the study with 10 students who had just completed a clinical practice from a previous cohort.	<ul style="list-style-type: none"> <li>Attitudes + post-placement</li> </ul> The last post-placement assessment detected a greater ability to bring more skills, positive attitudes and knowledge to people with mental health problems
(Happell et al., 2011)	n= 68  Women n=64 (94.1%); Men n=4 (5.9%)  Age: 18-29 yrs n=35 (51.5%)	Quasi-experimental design Pre-post-	Questionnaire after psychometric evaluation of the baseline data (Happell, Moxham, & Platania-Phung, 2010), adapted from Consumer Participation Questionnaire (Happell et al., 2002). Reliability → Cronbach`s α ≥ 0.7 Validity → Not reported	<ul style="list-style-type: none"> <li>Attitudes + post-placement</li> </ul> Significant change was observed showing attitudes that are more favourable after clinical placement. No significant changes were observed when the patient was assessed in the management of his or her own illness process.

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<p>(Hastings, 2015)</p>	<p>n= 310</p> <p>Women (87.1%) Men (12.9%)</p> <p>No data on age</p>	<p>Quasi-experimental design Pre-post-</p>	<p>The Psychiatric Mental Health Clinical Placement Survey for First Day of Placement; and the Psychiatric Mental Health Clinical Placement Survey for the Last Day of Placement (Happell, 2008c; Wynaden, et al., 2000)</p> <p>Reliability → Cronbach's <math>\alpha</math> from 0.5 to 0.92 for questionnaire subscales (modest-impressive internal reliability)</p> <p>Validity → The creation and testing of the tool took place at the Nursing college of Curtin University of Technology through an "experts' opinion" and a pilot test group to test validity.</p>	<ul style="list-style-type: none"> <li>Attitudes/ Stigma – pre- post-, with some improvement after placement.</li> </ul> <p>Students expressed less optimistic feelings, highlighting negative attitudes and limited knowledge about mental illness; although a slight significant improvement was observed after the period of university mental health training.</p>
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<p>(Happell &amp; Platania-Phung, 2012)</p>	<p>n pre=150 n pre-post=66</p> <p>Pre: Women (94.2%) Men (4.5%)</p> <p>Post: Women(93.9%) Men (6.1%)</p> <p>Age: 18-29 yrs (Pre: 47.7%; post: 51.5%)</p>	<p>Quasi-experimental design Pre-post-placement</p>	<p>The Clinical Placement Survey (pre-placement and Post-placement) is adapted from Wynaden et al (2000).</p> <p>Reliability → Not reported Validity → Not reported</p>	<ul style="list-style-type: none"> <li>Attitudes + post placement</li> </ul> <p>In the post-placement assessment, the responses that reflect a positive attitude, the ability to respond to behaviours, and increased security and self-confidence when caring for people with a mental problem. The attitudes related to the confidence in the interaction with people diagnosed with a mental illness maintained an invariable value. An improvement in the understanding of the functions of mental health nursing was observed in mental mentality was observed.</p>
<p>(Yamauchi et al., 2011)</p>	<p>n= 76</p> <p>Women: n=72 Men: n=4</p> <p>Mean age: 20.97 (SD = 2.84)</p>	<p>Qualitative Exploratory, descriptive Pre-theory and post-placement.</p>	<p>To consider the number of significance tests conducted, analysis of thematic contents of Fisher exact tests was performed separately with Bonferroni's adjustment for each test. Significance level of <math>p &lt; 0.005</math>.</p>	<ul style="list-style-type: none"> <li>Attitudes + post placement</li> </ul> <p>The frequencies of words/phrases expressing negative attitudes were higher in the first assessment prior to theoretical education, while words/phrases with more positive or neutral nuances were higher after completion of clinical practice, expressing less apprehension.</p>

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**Table 3. Pre-Post-MH theory or Pre- Post- MH Clinical Practice**

AUTHORS YEAR OF PUBLICATION	SAMPLE	STUDY DESING	INSTRUMENTS	MAIN OUTCOMES
(Happell et al., 2014)	Cohort 1 n= 70 Cohort 2 n= 130  Women: Cohort 1 (91.4%) Cohort 2 (95.4%)  Age: 18-29 yrs Cohort 1(32.9%) Cohort 2(44.3%)	Cohorts Pre-Post- MH Theoretical studies  Cohort 1= traditional course Cohort 2= lived-experience course in mental health	Self-report questionnaire designed specifically for this study.  Reliability → Estimated according to each scale: from 0.56 to 0.92  Validity → Not reported	<ul style="list-style-type: none"> <li>Attitudes + post-placement</li> </ul> The lived-experience course showed statistically significant positive changes in the reduction of negative stereotypes, which were not observed in the traditional course, although the relevance of the knowledge of, and attitudes towards, mental health nursing was highlighted in both cohorts.

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<p>(Byrne et al., 2014)</p>	<p>Cohort 1: Pre: n=113 Post: n=61</p> <p>Cohort2: Pre: n=174 Post: n=110</p> <p>Women: Cohort1: 91.8% Cohort2: 96.4%</p> <p>Age: Cohort1= 18-29 yrs (25%) Cohort2= 18-29 yrs (47.8%)</p>	<p>Cohorts Pre-Post- MH Theoretical studies</p> <p>Cohort 1= traditional course Cohort 2= lived-experience course in mental health</p>	<p>Mental Health Consumer Participation Questionnaire Happell, Moxham, &amp; Platania- Phung, 2010, 2011; Happell et al., 2002)</p> <p>Reliability → Not reported Validity → Not reported</p>	<ul style="list-style-type: none"> <li>• Attitudes + post-placement</li> </ul> <p>Both cohort groups showed similar results in improved positive attitude. Cohort 1: A tendency to improve interest in, skills of, and positive attitudes towards, in people with mental health problems Cohort 2: A tendency towards positive attitudes to people with mental health problems, highlighting interest, but not the skills of mental health consumers.</p>
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<p>(Happell, 2009)</p>	<p>Pre-placement: n=784 Post-placement: n=687</p> <p>No epidemiological data</p>	<p>Quasi- Experimental pre-post- placement</p>	<p>Psychiatric/Mental Health Clinical Placement Survey for First Day of Placement (pre- placement) and the Psychiatric/Mental Health Clinical Placement Survey for Last Day of Placement (post- placement).</p> <p>The questionnaire was found to be valid and reliable on the basis of the pilot study and subsequent analysis of the psychometric properties (Hayman-White &amp; Happell, 2005)</p> <p>Reliability → Cronbach`s α from 0.5 to 0.92 for questionnaire</p> <p>Validity → The development and testing of the tool took place at the Nursing college of Curtin University of Technology through an "experts` opinion" and a pilot test group to test</p>	<ul style="list-style-type: none"> <li>• Attitudes + post-placement Differing amounts of theoretical preparation were shown to be related to differences in students' attitudes and opinions, especially in their sense of feeling prepared for the placement.</li> </ul> <p>Pre: Studies undertaken in different universities showed significant differences in the following subscales: preparedness for the field of mental health; responsibility for mental illness; stereotyped view and valuable contribution to mental health nursing.</p> <p>Post: The effects of university studies remained influential, highlighting preparedness for the mental health field; responsibility for mental illness; stereotyped beliefs; valuable input and positive clinical experiences.</p>
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<p>(Happell, 2008a)</p>	<p>Pre-placement n=784 Post-placement n=687</p> <p>Women (87% )</p> <p>No data on age</p>	<p>Quasi-Experimental pre-post-placement</p>	<p>Psychiatric/Mental Health Clinical Placement Survey for First Day of Placement (preplacement) and the Psychiatric/Mental Health Clinical Placement Survey for Last Day of Placement (post-placement). The questionnaire has subsequently been found to be valid and reliable with acceptable psychometric properties (Hayman-White &amp; Happell 2005).</p> <p>Reliability → Cronbach's <math>\alpha</math> from 0.5 to 0.92 for questionnaire subscales (modest-impressive internal reliability)</p> <p>Validity → The development and testing of the tool took place at the Nursing college of Curtin University of Technology through an "experts' opinion" and a pilot test group to test</p>	<ul style="list-style-type: none"> <li>• Attitudes + post-placement</li> </ul> <p>A significant positive change in attitudes, preparedness and confidence was demonstrated, with caregivers feeling less apprehensive towards people with mental health problems after completing their clinical practice placement, and a positive appraisal of the mental health nursing profession. The participants did not clearly identify whether the theoretical education had prepared them for the experience.</p>
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<p>(Happell, 2008b)</p>	<p>Pre-placement n=784 Post-placement n=687</p> <p>Women (87% )</p> <p>No data on age</p>	<p>Quasi-Experimental pre-post-placement</p>	<p>Psychiatric/Mental Health Clinical Placement Survey for First Day of Placement (preplacement) and the Psychiatric/Mental Health Clinical Placement Survey for Last Day of Placement (post-placement). The questionnaire has subsequently been found to be valid and reliable with acceptable psychometric properties (Hayman-White &amp; Happell 2005).</p> <p>Reliability → Cronbach's <math>\alpha</math> from 0.5 to 0.92 for questionnaire subscales</p> <p>The creation and testing of the tool took place at the Nursing college of Curtin University of Technology through an "experts' opinion" and a pilot test group to test validity.</p>	<ul style="list-style-type: none"> <li>• Attitudes + post-placement Before and after clinical practice, the aspect of feeling more prepared improves, with less anxiety, less stereotyped beliefs and more knowledge about mental illness (the last two characteristics see no significant changes).</li> </ul> <p>Mental health nursing education is a tool that influences nursing students' attitudes in preparation for practice in the field of mental health care.</p>
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<p>(Romem et al., 2008)</p>	<p>n=126 Women: n=116 No data on age</p>	<p>Quasi-Experimental pre- post-placement</p>	<p>The Attribution Questionnaire-27 (AQ-27) was adapted from Corrigan (2004)  ANOVA analysis of variance to examine attitude changes  Reliability → Cronbach's <math>\alpha</math> from 0.55 to 0.87 for the questionnaire subscales  Validity → Not reported</p>	<ul style="list-style-type: none"> <li>Attitudes / Stigma + post placement</li> </ul> <p>Expression of compassion for, and less fear of, people with mental health problems, and less need to segregate them from the community. Students also became aware of patients' own responsibilities, and the students' emotional responses as a process of the illness that needs to be managed and treated.</p>
<p>(Gil et al., 2016)</p>	<p>Pre-placement: n=140 Post-placement: n=89  No data on age and gender</p>	<p>Quasi-Experimental Pre- post-placement</p>	<p>Opinions on Mental Illness (OMIS). Inventory of Beliefs about Mental Illness (ICDM)  Reliability and validated → no reported data for the Portuguese population,</p>	<ul style="list-style-type: none"> <li>Attitudes / Stigma - post-placement, although with a moderate change.</li> </ul> <p>A moderate change was observed in attitudes that valued the acceptance, tolerance and social restrictions regarding people with mental health problems. But the view of incurability and unpredictability remained unchanged.</p>

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<p>(Moxham et al., 2016)</p>	<p>Group1 (intervention): n=40 Women: n=36 Men: n=4</p> <p>Group 2 (comparison): n=39 Women: n=32 Men: n=7</p>	<p>Cohorts Non-random Pre- post-placement , and post-three months (3months follow-up)</p> <p>Group 1 Recovery Camp (intervention)</p> <p>Group 2 typical mental health clinical placement(comparison group)</p>	<p>Social Distance Scale (SDS) (Link et al., 1987)</p> <p>Reliability → excellent internal consistency (r = 0.75 a 0.90+)</p> <p>Validity → acceptable.</p> <p>Data was analyzed using analysis of repeated variation of unidirectional measures (ANOVA) exploring parametric estimates between group scores at three time points.</p>	<ul style="list-style-type: none"> <li>• Attitudes / Stigma + post-placement</li> </ul> <p>There was a statistically significant difference in stigma ratings between the intervention group and the comparison group. Parameter estimates revealed that stigma ratings for the intervention group dropped significantly after placement and remained consistently low at the three-month follow-up. No significant differences were observed in the stigma ratings of the comparison group over time.</p>
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