

Abstract

1
2 Improving mental health status among individuals has become one of the primary concerns
3 globally, including in Pakistan. However, there is a scarcity of studies assessing the level of
4 mental health literacy (MHL), efficacy of mental health awareness programs, and MHL
5 related measures in Pakistan. This systematic review aims to bridge this gap in the literature.
6 Nine electronic databases were searched to identify empirical literature in this area. Only
7 those studies which aimed to evaluate the efficacy of MHL and published in English were
8 selected. Non-peer reviewed articles and grey literature were excluded. From 613 studies
9 retrieved, 59 studies met inclusion criteria and were reviewed. Forty-three of included studies
10 mentioned mental health outcome measures (only four mentioned reliability indices), 13
11 discussed stigma, 18 examined help-seeking approach to mental illness treatment, and 47
12 discussed mental health knowledge. Additionally, it was found that there is considerable
13 heterogeneity and limited validity in outcome measures of MHL. Meta-analysis was not
14 conducted owing to lack of MHL operationalisation, and measurement tools lacked
15 consistency and standardization. This review presented a compilation of available studies on
16 MHL to assist those currently studying various dimensions of MHL or designing new studies.
17 The outcome of the review highlights the need for well-designed controlled intervention
18 studies. Further implications for researchers, practitioners, and policymakers are mentioned.

19 **Keywords:** *mental health literacy, health promotion; help-seeking; interventions; stigma;*
20 *psychological tests, Pakistan*

21

22 **Background**

23 The World Health Organization defines mental health as “a state of well-being in which
24 every individual realizes his or her own potential, can cope with the normal stresses of life,
25 can work productively and fruitfully, and is able to make a contribution to her or his
26 community” (WHO, 2014b, p. 10). Mental health issues are one of the leading factors of
27 disease burden, and major depression is the second primary cause of disability and
28 significantly contributing to suicide and heart disease worldwide (Waldmann, Staiger, Oexle,
29 & Rüschi, 2019; Whiteford et al., 2013). Universally, almost 350 million individuals suffer
30 from depression, 60 million individuals suffer from bipolar affective disorder, and
31 approximately 21 million from schizophrenia/other psychoses (Breslin, Shannon, Haughey,
32 Donnelly, & Leavey, 2017; Pisciotta et al., 2019). Yet, mental health research in developing
33 countries is growing but still fewer in number, and there is a paucity of research on mental
34 health perceptions in Asia, especially in developing countries like Pakistan (Choudhry, 2019;
35 Lund et al., 2010). Also, prevalence of diagnosable psychiatric disorders in the Pakistani
36 population remains unclear (Alosaimi et al., 2014; Khalily, 2011).

37 Based upon the definition of health literacy by WHO (2013), mental health literacy
38 (MHL) consists of three interconnected concepts: knowledge (knowledge of mental illness
39 and positive mental health), attitudes, and help-seeking efficacy (WHO, 2013). MHL is
40 defined as “knowledge and beliefs about mental health problems which aid their recognition,
41 management, or prevention” (Jorm et al., 1997, p. 143). MHL not only is a primary indicator
42 of mental health but also has the capability to enhance person’s health (Kelly, 2007; Kutcher,
43 Bagnell, & Wei, 2015; Kutcher, Wei, & Coniglio, 2016; Wei, McGrath, Hayden, & Kutcher,
44 2015). Enhanced information about mental health may help decreasing stigma against mental
45 health problems (Chang & Biegel, 2018; Henderson, Evans-Lacko, & Thornicroft, 2013). For
46 the current review, we theorised MHL to include four domains: 1) knowing how to seek and

47 preserve better mental health; 2) knowing mental health issues and their treatments; 3)
48 minimising stigma against mental illness; and 4) increasing help-seeking effectiveness
49 (Kutcher et al., 2015; Wei et al., 2015).

50 According to World Health Organization (WHO, 2014), the provision of the mental
51 health services and interventions are difficult because of less employment ratio of qualified
52 practitioners in Pakistan. An analysis of the mental health care system in Pakistan showed
53 that situation improved after the execution of a new Mental Health Law on 20 February 2001,
54 substituting the Lunacy Act of 1912, which embodies the current concept of mental illnesses,
55 treatment, rehabilitation, and civil and human rights (Tareen & Tareen, 2016). Nevertheless,
56 mental health services comprising policies, programmes, and resources are still not sufficient
57 with respect to the total burden of mental health issues in Pakistan. According to a report, the
58 number of trained mental health professionals in Pakistan is small compared to the demands
59 of the population and specialist services are almost non-existent (Karim, Saeed, Rana,
60 Mubbashar, & Jenkins, 2004; Malik & Bokharey, 2001).

61 In Pakistan, various socio-cultural as well as religious factors influence beliefs of
62 individuals and there is a lack of wide acceptance and stigmatization of mental health
63 problems. Most people consult primary medical care for their mental health issues and the
64 majority of the staff are not trained to recognize or deal with these issues (Choudhry et al.,
65 2016). A huge majority of individuals with mental health issues consult faith healers and
66 religious leaders initially, and consult mental health professionals only when these initial
67 modes of treatments are ineffective (Mubbashar & Saeed, 2001). Most people attribute
68 supernatural causes to their health problems (Choudhry, Khan, Park, & Golden, 2018).
69 Karim, Saeed, Rana, Mubbashar, and Jenkins (2004) highlighted that mental illness is
70 stigmatized and broadly perceived to have supernatural causes, and traditional healers along
71 with psychiatric services are the primary mental health service providers. Similar findings

72 were shown in a recent meta-synthesis (Choudhry et al., 2016). Such a lack of MHL and
73 different cultural beliefs associated to mental health can be a common issue in many of the
74 developing countries (Mubbashar & Farooq, 2001), which have implications for help seeking
75 and treatment outcomes.

76 We were unable to locate any reviews on the effectiveness of MHL interventions,
77 stigma on mental health issues, and knowledge measures in Pakistan; there seems to be a lack
78 of thorough understanding of MHL (measures, interventions, and presence) in the country.
79 Hence, there is a need to develop an evidence base to aid policy development on tackling the
80 issues related to limited MHL and mental health services provision. The current review was
81 aimed at scrutinizing the extent, range, and nature of research activity on MHL in order to
82 develop a comprehensive understanding of MHL; to condense and disseminate research
83 findings; and to find out research gaps in the existing literature on MHL in Pakistan.

84 **Methods**

85 **Protocol**

86 All methods of data analysis and reporting followed the PRISMA- Preferred Reporting
87 Items for Systematic Reviews and Meta-Analyses guidelines (Moher et al., 2009). A protocol
88 is registered and available on the PROSPERO database and can be accessed online
89 (registration number: CRD42019133293). (See Supplementary Table 1: PRISMA checklist)

90 **Inclusion and exclusion criteria**

91 We included studies which evaluated MHL and are published in English, regardless of
92 study design (e.g., qualitative, randomized controlled trials, nonrandomized, descriptive
93 studies, mixed methods, and cluster randomized controlled trials). We also included the
94 studies which assessed MHL training programs targeting varied mental health consumers.
95 The systematic review included studies which explored at least one of the main components
96 of MHL as follows: (a) knowledge of mental illnesses and their treatment; (b) stigmatizing

97 attitudes towards mental illnesses; (c) confidence in helping others with mental health
98 problems and (d) behaviour of helping providers. No restriction was applied on the date of
99 publication of the studies or on the duration of the interventions in the programs.

100 When mental disorders (neuroses- and psychoses-based disorders) were the focus,
101 programs additionally addressing other issues (e.g., addiction) were not excluded. Studies
102 which were not published in peer-reviewed journals, such as editorials, grey literature (e.g.,
103 programs published by the government, national public health agencies, sports bodies, and
104 mental health charitable organisations), dissertations, and conference proceedings were
105 excluded.

106 **Information sources and search strategy**

107 We used nine electronic databases and also manually checked reference lists of articles.
108 MEDLINE, Embase, ERIC/ProQuest, ScienceDirect, PubMed, PsycINFO, CINAHL, Scopus,
109 EBM Reviews - Cochrane Central Register of Controlled Trials, and Ovid Emcare were the
110 databases searched. Only those studies which aimed to evaluate the efficacy of MHL and
111 published in English were selected. Each database was searched from its year of inception to
112 May 25, 2019. Synonymic keywords were searched in each database using the Boolean
113 operators, truncation, MeSH terms and wildcard features as appropriate for each database's
114 indexing reference (Dinet, Favart, & Passerault, 2004). The search was stratified into three
115 categories: mental health problems, mental health education, and setting. Search terms were
116 chosen based on previous research, theory, and practice. A full electronic search of the
117 PubMed search is uploaded as Supplementary Table 2.

118 **Study selection**

119 Two reviewers (KM and FRC) independently screened titles and abstracts and excluded
120 studies that were not relevant to the topic of interest. They independently reviewed full texts

121 of articles for the final selection of included studies and met to resolve any disagreements
122 between the reviewers.

123 **Critical appraisal method**

124 The quantitative and qualitative studies were assessed for quality using the 14 and 10
125 criteria checklist given by Kmet and colleagues (2004), respectively (Kmet, Cook, & Lee,
126 2004). An overall rating (from 0 to 1) was assigned to every study; higher numerical ratings
127 indicated higher quality. This checklist has already been used in previous reviews for
128 assessing the quality of included studies (Choudhry et al., 2019; Munawar, Kuhn, & Haque,
129 2018; Wassenaar, Schouten, & Schoonhoven, 2014). The lowest quality rating of both
130 quantitative and qualitative studies included in this review was determined to be 0.55 and
131 four studies were excluded based on these criteria.

132 To assess the internal validity of the RCTs, the Cochrane tool for assessing risk of bias
133 (ROB) (Higgins & Altman, 2008) was used. All included randomized studies were assessed
134 for potential biases in five domains: selection bias, performance bias, detection bias, attrition
135 bias, and reporting bias (Higgins & Altman, 2008). Each domain was ranked as low, unclear,
136 or high ROB according to the criteria of the tool.

137 The Joanna Briggs Institute Critical Appraisal tools were used for a quasi-experimental
138 study (Briggs, 2017). The mixed-method studies were assessed using Mixed Methods
139 Appraisal Tool (MMAT) (Hong et al., 2018). Two authors (KM and FRC) independently
140 assessed all the included studies. When the independent evaluations of the ranks differed
141 between the two authors, they met and discussed the disagreements to reach a consensus. All
142 studies were considered eligible for inclusion (please see Supplementary Table 2, 3, 4, 5, 6).

143 **Data extraction**

144 A single author (KM) extracted the following data from each included study:
145 region/setting, objective, sampling/participant characteristics, study type, duration,

146 intervention, control, mental health outcome measure(s), psychometric properties, mental
147 health descriptor (stigma, mental health knowledge, help-seeking intentions and behaviour),
148 conclusion, and comments/limitations. Another author (FRC) confirmed the data extracted
149 from each included study. When any difference was observed in the data extracted between
150 KM and FRC, they verified the data (Supplementary Table 7).

151 **Synthesis and analysis of results**

152 For combining and reporting the results, we inspected each study's outcomes and
153 categorised them in accordingly.

154 **Risk of bias and heterogeneity**

155 A meta-analysis were not conducted as considerable heterogeneity was seen in the
156 assessment of MHL and instead decided to present a narrative synthesis. No additional
157 subgroup or sensitivity analyses were conducted, as these were not in line with our study
158 aims.

159 **Results**

160 A total of 603 titles and abstracts were retrieved (171 from MEDLINE, 170 from
161 Embase, 14 from ERIC/ ProQuest, 28 from ScienceDirect, 39 from PubMed, 44 from
162 PsycINFO, 26 from CINAHL, 54 from Scopus, 14 from EBM Reviews - Cochrane Central
163 Register of Controlled Trials, and 43 from Ovid Emcare). Ten more articles were identified
164 from references lists. After removal of duplicates ($n = 382$), 231 titles and abstracts remained.
165 Of these, 158 were identified as irrelevant and were excluded.

166 All the excluded titles and abstracts were again screened by FRC and a consensus was
167 reached for their exclusion. Finally, a total of 73 articles underwent a further detailed
168 screening for full-text printing eligibility; of these, 14 were excluded as they were either
169 chapter in books, conference abstracts, short reports or RCT protocols, and had poor quality
170 ratings. Eventually, 59 met the criteria for a standardised independent full-text screening by

171 two authors, were included in qualitative synthesis and there was 100% author agreement for
172 their inclusion for further review synthesis (see Figure 1: PRISMA flow diagram showing
173 process of study selection for inclusion in the systematic review). No further articles were
174 identified by hand-searching the reference lists of the 59 included articles.

175 *Insert figure 1 here*

176 **Study characteristics**

177 Study characteristics are detailed in Supplementary Table 7. Dates of published studies
178 ranged from 1988 to 2019: 3 studies from 1992 to 2001, 29 studies from 2002 to 2011, and
179 27 studies from 2011 to 2019 (please see Supplementary Figure 1 and 2). The locations of the
180 59 studies varied: 24 in various regions of Karachi; 10 in Lahore; 5 in Peshawar, 13 in
181 Rawalpindi/Islamabad, and 6 in other cities. Studies adapted various designs including (as
182 shown in Supplementary Table 7): qualitative, cluster/randomized controlled trials, quasi-
183 experimental study, cross-sectional studies, and mixed-method studies.

184 **Stigma**

185 The stigma around mental health issues was strong, depicted in various ways across
186 reviewed studies. For instance, a study on pharmacy undergraduate students revealed their
187 unwillingness to socialise or work with individuals having mental health problems and
188 considered them a threat to others (Abbas et al., 2015). Studies have shown negative attitudes
189 were shown towards individuals with schizophrenia, depression, alcohol, and drug problems;
190 These individuals were considered dangerous, different, and unable to take care of
191 themselves (Naeem et al., 2006; Rathod et al., 2018). Another study showed that there were
192 stronger stigmas and taboos associated with female patients consulting male traditional
193 healer(s), hence, these females avoided visiting male healers. In extreme cases, the females
194 were accompanied by their male relatives, and were met with shame and embarrassment due
195 to taboos attached to female patients' mental health issues. Therefore, as compared to males
196 who have better mobility, choice of treatment, and economic independence, there were

197 reduced chances of females seeking help for their mental health issues (Farooqi, 2006;
198 Hussain et al., 2017). In another study, patients with schizophrenia were described as more
199 dangerous and were suggested to be locked away from the rest of the society (Furnham et al.,
200 2008; Suhail, 2005). Overall, people were less likely to form social relationships (i.e.,
201 marrying them or accepting them as a close friend) with individuals having mental health
202 problems (Suhail, 2005). Medical professionals held discriminating attitudes and showed
203 hesitance when they had to deal with psychiatric patients (Laraib et al., 2018; Zafar et al.,
204 2009).

205 Parents of children with autistic spectrum disorder and intellectual disabilities reported
206 unsympathetic, intolerant attitudes abuse and neglect toward their child by other people
207 including schoolteachers. Because of this mistreatment at the hands of the community, such
208 children were restricted to stay in the home (Minhas et al., 2015; Mirza et al., 2009). Parents'
209 main worry was the absence of a proper system of care for such children to teach them basic
210 self-care and unnecessary use of physical restraint by next of kin and community when the
211 parents passed away (Mirza et al., 2009). There were few cases, however, where positive
212 attitudes were found. Patka and colleagues (2013) found positive attitudes among highly
213 educated female staff who served individuals with intellectual disability. In the same way,
214 caregivers' perception of individuals with mental health issues revealed that these individuals
215 were considered reliable, able to work, and were comfortable with having them as their
216 friends (Shah et al., 2019).

217 **Help-seeking approach to mental illness treatment**

218 The reviewed studies showed varied opinions of seeking help in case of mental health
219 issues. For instance, a survey of physicians (psychiatrists, paediatricians, neurologists and
220 family physicians) and non-physicians (psychologists and speech therapists) revealed reduced
221 endorsement of speech therapy or other special education services for children with autism

222 due to limited knowledge (Imran et al., 2011). In another study, it was shown that individuals
223 were less likely to seek psychological help if they were men and Muslims who had higher
224 scores on measures of depression, anxiety, and stress, as compared to Hindus, Sikhs,
225 Christians and those with no religious affiliation (Liaqat et al., 2018; Sheikh & Furnham,
226 2000; Zafar et al., 2008).

227 Normally, seeking psychiatric help is the last option, as people preferred to consult
228 religious healer (*Maulvi, Peer, Fakir*), naturopathy (*Tibb*), homoeopathic doctor, Faith healer
229 (*Aamil Sanyasi*), and sometimes school teachers for guidance and solace (Mirza et al., 2006;
230 Mirza et al., 2009; Naeem et al., 2012; Shah et al., 2019; Usman et al., 2018; Zafar et al.,
231 2008), however, some people also preferred consultation from consult general practitioners
232 (Farooqi, 2006). In some cases, caregivers of children with intellectual disabilities resented
233 their lack of knowledge and the resulting delay in seeking professional help. Mental health
234 services were sought in a few cases, especially by residents of urban areas, and it was
235 influenced by factors, such as: suggestion from others about engagement in the mental health
236 services, no effectiveness of traditional healing treatments, risky behaviours (threatening
237 themselves, their caregivers or others), or a combination of these factors (James et al., 2002;
238 Mirza et al., 2009; Naqvi et al., 2009; Shah et al., 2019; Zafar et al., 2009). Within the
239 psychiatric treatment modalities, highest awareness was documented for Pharmacotherapy
240 followed by psychotherapy and electroconvulsive therapy/treatment (Zafar et al., 2009).
241 However, there was lack of knowledge about any other professionals involved in the care of
242 the mentally ill (e.g., psychologists) and inability to identify the correct definition of
243 psychotherapy (Naeem et al., 2012; Zafar et al., 2009).

244 Contrary to these findings, a study assessing the attitudes, knowledge, and practices of
245 teachers towards dyslexia, attention-deficit/hyperactivity, and autistic spectrum disorders
246 showed that the schoolteachers recognized the need of psychological supports among

247 children with these problems. These teachers also endorsed hiring specially trained educators
248 for these children in schools (Lodhi et al., 2016). In another study, parents of children with
249 autistic spectrum disorder (ASD) and people in rural areas mentioned difficulty in assessing
250 mental health services, rehabilitation, health and education services due to low education,
251 distance, financial or time costs (Minhas et al., 2015; Usman et al., 2018; Yousafzai et al.,
252 2011). The parents only went to seek help when the secondary behavioural and social
253 problems linked with ASD became noticeable and disturbed family (Minhas et al., 2015). The
254 residents of rural areas specifically consulted traditional faith healers due to religious reasons
255 (Usman et al., 2018). The educated parents who had access to information about ASD felt
256 that even the medical profession had only limited information or knowledge about the
257 condition, and hence, they kept on changing doctors for their child's problems (Minhas et al.,
258 2015).

259 Furthermore, the mothers of children with intellectual disabilities received little support
260 from their husbands or from extended members of the family and were blamed for having a
261 child with disabilities (Yousafzai et al., 2011). A study comparing the attitude toward seeking
262 mental health services among students of various disciplines showed that students of
263 Psychology were mostly in favour of psychotherapy (Zaidi & Ali, 2017). These studies show
264 that mental health services are considered the last option after patients have tried other means
265 dealing with their mental health problems especially traditional faith healers.

266 **Mental health knowledge**

267 The included studies revealed limited or complete absence of mental health knowledge
268 among participants. For instance, in one study, undergraduate pharmacy students disagreed
269 any improvement in depressed individuals even after seeking treatment (Abbas et al., 2015).
270 A very small proportion of participants (patients, caregivers, and health care providers)
271 preferred psychological/psychiatric method of treatment and had insight according to

272 Western model (Afridi & Ahmed, 1992; Mirza et al., 2006; Naqvi et al., 2009). In another
273 study, a few of schizophrenia patients, their caregivers, mental health professionals,
274 psychology students, and nomads endorsed a bio-psycho-spiritual-social model of illness
275 (Choudhry & Bokharey, 2013; Naeem et al., 2014; Zaidi & Ali, 2017). Most of patients
276 lacked insight, attributed symptoms based on socio-cultural myths and values, and had poor
277 family knowledge of illness (Afridi & Ahmed, 1992; Ahmad et al., 2017; Mirza et al., 2009;
278 Naeem et al., 2012; Rabbani, 1999; Zafar et al., 2008). Similarly, the rates of relapse was
279 higher especially in those schizophrenic patients who preferred traditional faith healers,
280 lacked insight, and used psychoactive substances either as an alternative to psychotropic
281 medications, or as a consequence of use, and had a reduced recollection to take prescribed
282 psychotropic agents (Ahmad et al., 2017).

283 Studies on patients receiving psychopharmacological medications revealed that these
284 patients were not provided information about: diagnosis, alternative treatment options, causes
285 of illness, duration of treatment, adverse effects of medications, and referral options (Ganatra
286 et al., 2009; Hussain et al., 2017; Taj & Khan, 2005). Furthermore, in some studies, patients
287 and caregivers lacked insight about nature of the problems, perceived negative consequence,
288 and had limited belief in the effectiveness of treatment (Hussain et al., 2017; Naeem et al.,
289 2012; Taj & Khan, 2005; Tareen et al., 2008). Studies on substance abuse, smoking and betel
290 nut chewing showed low awareness about: adverse effects, existence of re-rehabilitation
291 facilities, and continued abuse of substances even after knowing the dangers of substances
292 among users (Malik et al., 2012; Minhas & Rahman, 2009; Nisar et al., 2007; Shafiq et al.,
293 2006; Shah et al., 2008).

294 Some studies revealed mixed views regarding the therapeutic action of psychotropic
295 drugs and psychotherapy. The participants shared concerns about psychiatric drugs having
296 addiction potential, but for some mental health problems, such as schizophrenia, depression

297 and intellectual disability, medications were preferred (Abid et al., 2018). The over-
298 subscription of psychotropic drugs was also a concern of parents having children with mental
299 health problems (Abid et al., 2018). Furthermore, studies on parents', healthcare
300 professionals', and teachers' knowledge and awareness of autism showed that media, doctors,
301 medical school training, medical journals, pharmaceutical companies, and health
302 professionals were playing a major role in increasing awareness around autism (Anwar et al.,
303 2018; Arif et al., 2013; Minhas et al., 2015; Rahbar et al., 2011). Most of the parents accepted
304 parental counselling to be an effective treatment for autism and were willing to get their child
305 treated in case of them being diagnosed with autism (Anwar et al., 2018). Likewise, the
306 healthcare professionals endorsed psychotropic medications, mood stabilizers, speech
307 therapy, and special education interventions for autism but had misconceptions regarding
308 social, emotional, cognitive, and general descriptive features of autism (Imran et al., 2011).
309 The non-private school teachers recognized that medication and different behavioural and
310 cognitive therapies could manage autism (Arif et al., 2013). Furthermore, patients were
311 doubtful about the safety of ECT, didn't want ECT to be advised by psychiatrists, and
312 considered it a treatment of last resort (Arshad et al., 2007).

313 Similarly, studies assessing impact of various programmes such as: counselling-, peer-
314 delivered Thinking Healthy-, psychoeducation-, school mental-health -, ADHD training-, and
315 parent-based programme showed significant findings in the form of: improvements in anxiety
316 and depression symptoms, reduction in family burden, awareness of mental health, and
317 improved the knowledge and attitudes of mothers about infant development, in intervention
318 groups at post-assessment (Atif et al., 2017; Gul & Ali, 2004; Nasr & Kausar, 2009; Rahman
319 et al., 2009; Rahman et al., 1998; Syed & Hussein, 2010).

320 Studies on the beliefs of substance abusers, parents, medical students and the general
321 public about the manifestation, aetiology, and management of schizophrenia, drug abuse, and

322 autism revealed that sociological explanations (i.e., rejection from family/friends at an early
323 age, parents with inconsistent behaviour, societal pressure, consumption of drugs by
324 friends/family members, academic stress) were the norm. Also, it was still strongly believed
325 that mental health issues could be treated effectively by reducing social pressure and seeking
326 help from faith healers, counselling/recreational facilities and rehabilitation programs
327 (Furnham et al., 2008; Hussain et al., 2017; Malik et al., 2012; Minhas et al., 2015; Shafiq et
328 al., 2006; Yousafzai et al., 2009). Studies revealed that the knowledge and practice skills of
329 general physicians, medical students, school teachers, caregivers, and paediatricians were
330 below average by medical standards regarding schizophrenia, attention deficit/hyperactivity
331 disorder, ASD, intellectual disability, and learning disorder screening/diagnosis and treatment
332 (Irfan et al., 2015; Jawaid et al., 2008; Lodhi et al., 2016; Mirza et al., 2009; Naqvi et al.,
333 2012; Shaukat et al., 2014; Suhail, 2005). Many supernatural explanations for mental health
334 issues among doctors, faith healers, and caregivers (Haddad et al., 2016; Minhas et al., 2015;
335 Mirza et al., 2006; Saeed et al., 2000; Sheikh & Furnham, 2000; Zafar et al., 2008).

336 **Outcome measure validity assessment**

337 A total of 43 studies mentioned names of mental health outcome measures; two studies
338 (Haddad et al., 2017; Sheikh & Furnham, 2000) reported reliability indices for their own
339 participants, and two (Ahmad et al., 2017; Haddad et al., 2016) referenced reliability indices
340 from previous studies. However, as shown in Supplementary Table 7, 14 studies used
341 standardized tools but there were no references to reliability or psychometric validity; five
342 studies used questionnaires adapted from other standardized questionnaires. A total of 20
343 studies used self-designed questionnaire or structured interviews.

344 **Discussion**

345 This systematic review was a response to an increasing recognition that low levels of
346 MHL contributes to mental health problems (Altweck, Marshall, Ferenczi, & Lefringhausen,

347 2015). The study findings showed that younger participants and those having
348 psychology/psychiatry backgrounds had a comparatively better understanding of mental
349 disorders. For instance, mental health professionals were more optimistic toward treatment
350 outcomes and had positive attitudes toward individuals with mental health problems. Past
351 studies have also reported similar findings (Corrigan & Watson, 2007; Farrer, Leach,
352 Griffiths, Christensen, & Jorm, 2008).

353 However, general practitioners, family physicians, medical students having no prior
354 mental health training and traditional healers were sceptical about the efficacy of mental
355 health treatments, had a negative attitude, and misperceptions regarding aetiology of mental
356 health problems. Those who lived in urban areas, economically stable, and had positive
357 attitudes towards mental health problems revealed greater utilization of mental health
358 services. Most of the patients and caregivers preferred psychological/psychiatric treatments
359 as least favoured option and consulted general practitioners, religious healer (*Maulvi, Peer,*
360 *Fakir*), naturopathy (*Tibb*), homoeopathic doctor, faith healer (*Aamil Sanyasi*) due to: lack of
361 MHL, financial or travel costs, low education, living in rural areas, and taboos/stigmas
362 attached with seeking mental health services. Similar findings are shown in the past research
363 studies on non-Western countries (Loo & Furnham, 2012; 2013). As a result, the rates of
364 misdiagnosis and mismanagement of the symptoms increased which further deteriorated the
365 symptoms (Khalily, 2011; Naqvi et al., 2012).

366 Nevertheless, the adherence to mental health treatments due to enhanced MHL could
367 not be established owing to the absence of any studies assessing this link in Pakistan
368 (Choudhry et al., 2016). There is a need for mental health awareness program for health care
369 providers and medical students as most of the studies revealed reduced MHL in these
370 individuals. In comparison to the mental health professionals, general health care providers
371 are considered the earlier person sought after by the patients having mental health issues.

372 Therefore, it is very important for the general health care providers and medical students to
373 be equipped with MHL and have positive attitudes towards mental health issues in order to
374 improve the services provided. Furthermore, psycho-education programmes for mental health
375 problems need to launch not limited to the patients, and caregivers, but also for the general
376 public to dispel stigmatization connected with mental illness and ensure compliance to mental
377 health regimens.

378 **Limitations and recommendations**

379 The current systematic review excluded non-peer reviewed articles and grey literature,
380 and, therefore, may have missed some eligible studies. However, a review of grey literature
381 could be considered in future. As formerly mentioned, we did not conduct meta-analyses as
382 the operationalisation, measurement tools lacked consistency and standardization.
383 Consequently, the effects of various programs on mental health literacy remain uncertain.

384 **Conclusions**

385 This systematic review offers a compilation of available research on mental health
386 literacy. This review can assist in designing new measures to increase or assess MHL.

387 Due to the systematic selection of the studies, this review inevitably forms an inclusive
388 dataset of current MHL data in Pakistan for health stakeholders. This review also recognizes
389 and highlights many gaps in the field, for instance, lack of psychometrically valid tools to
390 evaluate mental health knowledge, help-seeking, stigma/ attitudes, as well as an absence of
391 measures that assess all the aspects of MHL at the same time. This recognition of a gap could
392 possibly guide future research work in the field of mental health.

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409

410

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744 Figure 1: PRISMA flow diagram showing process of study selection for inclusion in the
745 systematic review

