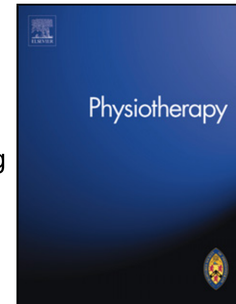
Journal Pre-proof



Core competencies for physiotherapists working with refugees: A scoping review

Emer McGowan Nicole Beamish Emma Stokes Rachael Lowe

PII: S0031-9406(20)30338-2

DOI: https://doi.org/doi:10.1016/j.physio.2020.04.004

Reference: PHYST 1179

To appear in: *Physiotherapy*

Received Date: 23 September 2019

Please cite this article as: McGowan E, Beamish N, Stokes E, Lowe R, Core competencies for physiotherapists working with refugees: a scoping review, *Physiotherapy* (2020), doi: https://doi.org/10.1016/j.physio.2020.04.004

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2020 Published by Elsevier.

Journal Pre-proof

1 **Title**: Core competencies for physiotherapists working with
2 refugees: a scoping review
3
4 **Authors:** Emer McGowan[a], Nicole Beamish[b], Emma Stokes[c], Rachael Lowe[b]
5 [a] Discipline of Physiotherapy, Trinity College, The University of Dublin, Dublin, Ireland
6 [b]PhysioPedia, UK
7 [c]Department of Physical Therapy & Rehabilitation Science, QU Health, Qatar University, Doha,
8 Qatar
9
10 1. Emer McGowan, mcgowaem@tcd.ie, Twitter: @EmerMcGowan
11 2. Nicole Beamish, nicole@physio-pedia.com, Twitter: @nfbeamish
12 3. Emma Stokes, estokes@qu.edu.qa , Twitter: @ekstokes
13 4. Rachael Lowe, rachael@physio-pedia.com, Twitter: @RachaelLowe
14
15 **Corresponding author**: Emer McGowan, Discipline of Physiotherapy, Trinity Centre for Health
16 Sciences, St James's Hospital, James St, Dublin 8. Tel: 00353 1896 2127
17
18 **Wordcount**: 2980
19
20 **Acknowledgements**: This scoping review was conducted as part of the Physiotherapy and
21 Refugees Education Project (PREP). The authors would like to acknowledge the support from
22 their co-investigators: Dr. Maria Alme, Dr. Kjersti Wilhelmsen and Dr. Djenana Jalovcic from
23 Western Norway University of Applied Sciences (Norway), Dr. Anna Patterson, Dr. Carina
24 Boström from the Karolinska Institute (Sweden), Lieke Dekkers, Joost van Wijchen, Dr. Elvira
25 Nouwens from Stichting Higeschool Van Arnhem en Nijmegen Han (Netherlands), Line Merete
26 Giusti, Egil Kaberuka-Nielsen, Dr. Rolf Vaardal from the City of Bergen-Centre for Migrant
27 Health (Norway), and Dr. Michel Landry from Duke University (USA). The authors would also
28 like to acknowledge the support and guidance they received for this review from Sandra
29 McKeown, health science librarian from Queen's University, Kingston (Canada).
30
31
32 **Funding**: The authors acknowledge that this research was funded by ERASMUS+ KA2 strategic
33 partnership program. Project number 2018-1-NO01-KA203-038891.

34 **Competing interests**: Dr. E. Stokes is the President of the World Confederation of Physical
35 Therapy.

36

37

Journal Pre-proof

38 **Title**: Core competencies for physiotherapists working with
39 refugees: a scoping review
40
41
42 **Wordcount**: 2980
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61 ***Objective:*** To summarise the existing knowledge base that can inform the development of a
62 core competency profile for physiotherapists to support and deliver rehabilitation services to
63 refugees.

Journal Pre-proof

Journal Pre-proof

64 ***Method:*** In this scoping review, a comprehensive search of peer-reviewed and grey literature
65 was conducted. The search parameters included studies relevant to the physiotherapy
66 profession and published between 2000 and 2019. MEDLINE, EMBASE, CINAHL, PEDro, and
67 Ovid PsycINFO databases were searched. Grey literature was accessed through website
68 searches, Google Scholar, and direct requests.

69 ***Findings:*** Three themes were identified in the literature. The first theme encompassed the
70 physical and mental health of refugees. The second theme explored the cultural competence
71 physiotherapists need to work with refugees. This theme included the cultural influences on
72 health and healthcare and communication strategies that could be used to optimise healthcare
73 for refugees. The last theme described refugees and the healthcare system which encompassed
74 the challenges that refugees face in accessing healthcare and navigating the healthcare system.
75 The main physiotherapy competencies detected in the literature were an understanding of
76 refugee health, the administration of culturally competent care and knowledge of healthcare
77 systems as they relate to refugees.

78 ***Conclusion:*** This comprehensive search identified three themes that can be used to inform the
79 development of a competency profile for physiotherapists working with refugees. These
80 themes are, however, rather vague and non-specific and signal the need for research to further
81 examine the physiotherapy competencies necessary to provide the highest quality of care for
82 this growing population.

83

84 **Contribution of Paper**

85 *What does this paper add to the current literature?*

Journal Pre-proof

86 • This review summarises the existing knowledge base related to the provision and
87 delivery of rehabilitation services to refugees.
88 • Practical considerations for physiotherapists working with refugees are provided.

89

90 *Key messages*

91 • The main competencies needed by physiotherapists working with refugees are an
92 understanding of refugee health, administration of culturally competent care, and
93 knowledge of healthcare systems as they relate to refugees.
94 • Rehabilitation provided to refugees should take a multi-disciplinary approach.
95 • Further exploration of the physiotherapy competencies needed to provide the highest
96 quality of care for refugees is warranted.

97

98 **Key words**: Refugees, Rehabilitation, Physiotherapy, Competencies

99 *Introduction*

100

101 In recent years, there has been a steady increase in the global number of refugees and
102 migrants[1]. The United Nations High Commissioner for Refugees (UNHCR) reported that at the
103 end of 2018 there were over 29 million refugees and asylum seekers across the globe[2]. The
104 large and increasing numbers of refugees call for the development of appropriate knowledge
105 and skills to facilitate effective healthcare delivery in their receiving countries. Many refugees
106 arrive with complex health needs, both physical and mental, signifying the important role of

Journal Pre-proof

Journal Pre-proof

107 rehabilitation[3]. Competency profiles, which detail the knowledge, activities, tasks, behaviours
108 and skills required to provide optimal care for this population, have been developed for some
109 health professions, e.g. public health professionals [4], and for health professionals in
110 general[5]. However, there is no clear definition of the competencies needed by
111 physiotherapists to optimally serve this population. This review aims to summarise the existing
112 knowledge base, considering both peer-reviewed and grey literature that can inform the
113 development of a competency profile for physiotherapists to support and deliver rehabilitation
114 services to refugees.
115
116 The definitions used for this review are displayed in Table 1. When discussing the articles
117 included in this review, the terms refugee or migrant are used depending on which was used in
118 the specific study. However, when the results of the articles are being discussed more
119 generally, the term refugee is used consistently. As noted by the UNHCR[6], the large numbers
120 of people arriving by boat to Europe in recent years comprise both refugees and migrants but
121 the majority are refugees and the term migrant would only be correct for a small proportion.
122
123
124
125
126 **Table 1**: Definitions used in this review

Term	**Definition**

Journal Pre-proof

Journal Pre-proof

Refugee	According to the UNHCR a refugee is someone who: "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence, is unable or, owing to such fear, is unwilling to return to it" (UNHCR-Refugee Convention).
Migrant	A 'migrant' is fundamentally different from a refugee. Refugees are forced to flee to save their lives or preserve their freedom, but 'migrant' describes any person who moves, usually across an international border, to join family members already abroad, to search for a livelihood, to escape a natural disaster, or for a range of other purposes. However, refugees and migrants often employ the same routes, modes of transport, and networks. Movements of both refugees and migrants are commonly referred to as 'mixed movements'. It is important to distinguish the different categories of person in mixed migratory movements and apply the appropriate framework of rights, responsibilities, and protection (UNHCR-Emergency Handbook).

127

128 *Methods*

129

Journal Pre-proof

130 A scoping review was conducted between November 2018 and February 2019. This review was
131 informed by Arksey and O'Malley's[7] methodological framework and other recommendations
132 from Levac et al.[8] and Peters et al.[9] and consisted of four steps. First, a search strategy was
133 implemented to find relevant publications, next publications were screened and selected using
134 our predetermined inclusion/exclusion criteria. Thirdly, we extracted the data from the
135 included publications and grey literature, and lastly, we organised, summarised, and presented
136 the results[7,9]. This review aimed to explore the extent and range of knowledge of this
137 particular area, and therefore in keeping with the guidelines for conducting scoping reviews,
138 the retrieved literature was not systematically appraised.
139
140 The search parameters included studies from peer-reviewed and grey literature relevant to the
141 physiotherapy profession and published between 2000 and 2019. The start date of 2000 was
142 chosen to reflect current physiotherapy practices. To locate peer-reviewed literature the
143 following electronic bibliographic databases were searched: MEDLINE, EMBASE, CINAHL, PEDro
144 and Ovid PsycINFO. Hand searching and reference list searching were also employed to locate
145 peer-reviewed literature[9]. Grey literature was accessed through website searches, Google
146 Scholar and direct requests to the following organizations: International Committee of the Red
147 Cross, Humanity and Inclusion, Health Volunteers Overseas, Health Policy & Administration of
148 the American Physical Therapy Association, Global Health Division of the Canadian
149 Physiotherapy Association, Australian Physiotherapy Association, WCPT (World Confederation
150 for Physical Therapy) and ADAPT (Chartered Physiotherapists in International Health and
151 Development).

Journal Pre-proof

Journal Pre-proof

152

153 To ensure a comprehensive search, a health science librarian was consulted to develop the

154 search terms and to ensure search terms were tailored for each database. An example of our

155 search term strategy can be found in Table 2 (See Appendix 1 for the full electronic search

156 strategy used in Ovid MEDLINE). Publications were excluded if: 1) the article was published

157 prior to 2000, 2) the reviewers were unable to obtain an English translation of the article, 3) the

158 article did not address refugees or migrants and the physiotherapy profession or

159 physiotherapists' knowledge, activities, tasks, behaviours or skills.

160 **Table 2:** Ovid MEDLINE search strategy.

Journal Pre-proof

Journal Pre-proof

To encompass the term Physiotherapy or Physical therapy or Rehabilitation

- exp Physical Therapy Modalities
- Physical Therapists
- (physiotherap* or physical therap*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- (physiotherap* or physical therap*).jw.
- [OR] rehabilitat*.mp,jw

[AND]

To encompass the term Refugee

- "emigrants and immigrants"/ or undocumented immigrants/ or refugees/
- (emigra* immigra* or migrant*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
- (displaced adj3 (people or person* or group* or population*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

161

162 Covidence Online Software (www.covidence.org) was used to manage the retrieved items, to
163 perform the abstract/title review, and to extract the data from the studies included in the

164 review. First, two reviewers independently screened articles for relevance based on their
165 titles/abstracts. Any disagreements were resolved by a consensus discussion and/or
166 consultation with two other researchers. When it was unclear if the research involved
167 physiotherapy and/or refugees, the abstract was included in the full-text review. Full-text
168 reviews and charting of the data were performed independently by two researchers. The
169 research group developed a data extraction form to record essential information (study details,
170 aims, population, methods, characteristics relating to physiotherapy and refugee health and
171 potential implications for physical therapy), from each article. Patterns and common topics or
172 findings in the data were identified by the reviewers and then discussed using a consensus
173 approach to form the initial themes and subthemes. Using a thematic analysis approach the
174 extracted data from the articles were then coded by each reviewer. Reviewers identified the
175 predominant theme(s) in each article independently. A consensus approach was then used to
176 refine the themes and to inform the directed content analysis of the data[10]. Key themes were
177 identified and agreed upon by the two reviewers with any discrepancies resolved by a
178 consensus discussion with a third reviewer.
179

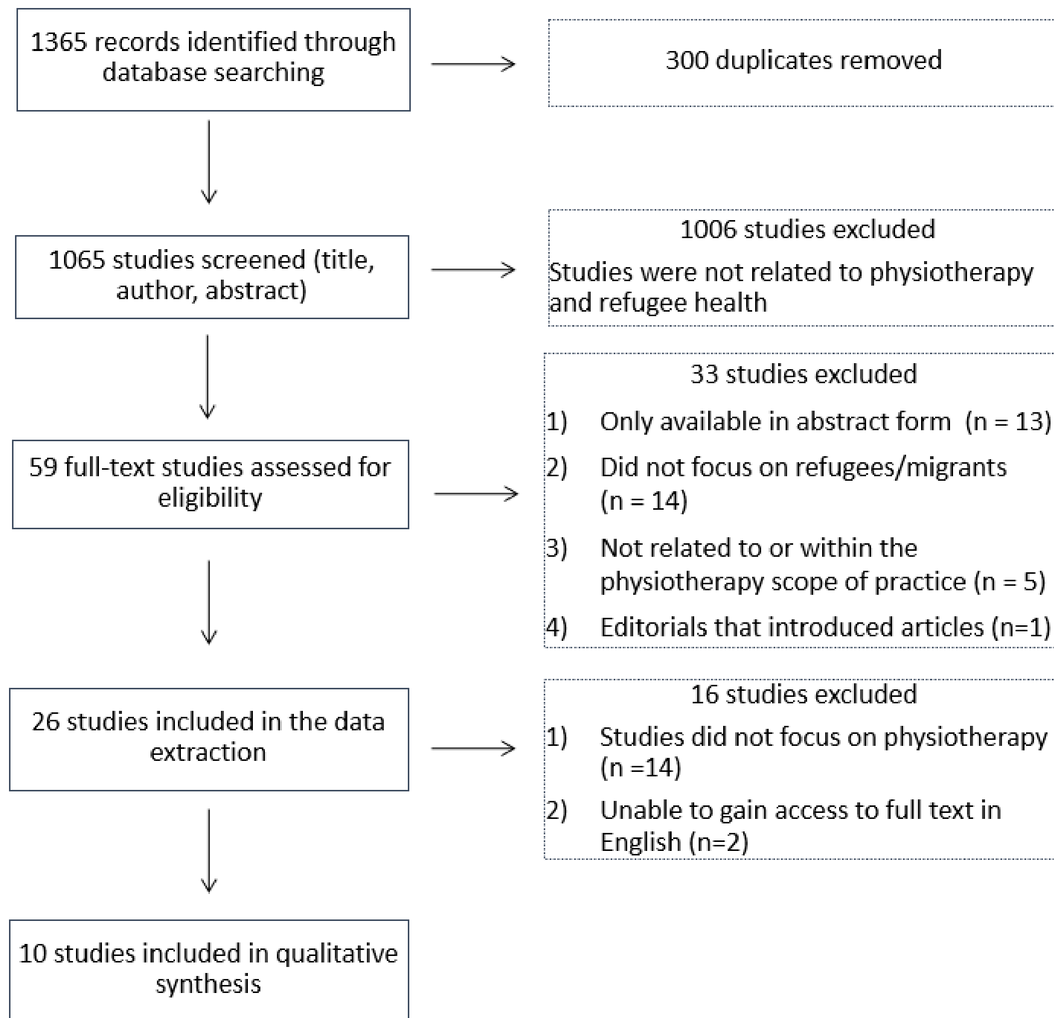
180 ## Results

181

182 **Peer-Reviewed Literature**

183 The search of the peer-reviewed literature returned 1365 articles. The stages of the peer-
184 reviewed literature search are displayed in Figure 1.
185

Journal Pre-proof



186 **Figure 1**:

187 Flowchart showing the article retrieval process of the articles to be included in the scoping

188 review.

189

190 The ten included articles are summarised in Table 3. All the studies were conducted in Europe

191 with the majority (n=8) coming from Nordic countries. Five of the studies were interview-based,

192 qualitative studies. The other methodologies employed were qualitative questionnaires,

193 qualitative multiple case studies, Delphi method, longitudinal-single cohort, and controlled

194 descriptive studies. Participants were migrants or refugees in four of the studies, health

195 professionals in five of the studies and one study included both health professionals and

196 refugees/migrants.

Journal Pre-proof

Journal Pre-proof

Table 3: Summary of the relevant findings from the peer reviewed literature.

Author	**Key aims and objectives**	**Methods**	**Summary of relevant findings**	**Themes**[a]
Dogan et al.[11]	To describe the problems Turkish immigrants and German healthcare personnel faced and the ethical implications of these problems.	Qualitative – Survey	Highlighted the importance of good communication and an understanding of culture-based expressions of illness. Provided recommendations for the education of healthcare professionals to improve practice.	**Cultural Competence.**
Dressler and Pils[12]	To examine how the staff of a post-accident, in-patient rehabilitation centre in Austria perceived cross-cultural communication between the staff and migrant and ethnic minority patients.	Qualitative - semi-structured interviews	Participants recognised that language barriers and cultural aspects influence rehabilitation outcomes. There was particular reference to attitudes concerning disease and disability, differing views on the role of health professionals, and pain behaviour. Provided suggestions for overcoming these barriers.	**Cultural Competence;** Refugees and the Healthcare System.

Fougner and Horntvedt [13]	To describe Norwegian physiotherapy students' experiences of cultural diversity in practice.	Qualitative - semi-structured interviews	Cultural competency training is important for physiotherapists to help prevent interactions based on myths and stereotypes, and is vital to raise physiotherapists' consciousness of these phenomena and the concepts associated with them. Suggested that there should be additional focus on cultural competency for healthcare professionals in a multicultural society.	**Cultural Competence.**
Gard [14]	To identify factors important for a good interaction between a physiotherapist and a patient who has been tortured.	Qualitative - multiple case study	Identified five prerequisites for a good interaction with persons who have undergone torture and five factors in the interaction situation that are important for a good interaction.	Refugee Health; **Cultural Competence.**
Möller [15]	To examine how physiotherapists in primary health care experience encounters with migrant refugee patients.	Qualitative - semi-structured interviews	Highlighted that the collision of cultures between physiotherapist and refugee patient can be a challenge. Identified that cultural communication differences and language barriers exist and it is important to use a trained interpreter. Suggested physiotherapists need more	Refugee Health; **Cultural Competence;** Refugees and the Healthcare

Journal Pre-proof

Journal Pre-proof

			knowledge to manage psychosomatic problems.	System.
Müllersdorf et al.[16]	To examine the experience of living with musculoskeletal pain and experiences of health care among dispersed ethnic populations of Muslim women.	Qualitative - semi-structured interviews	Discussed the association between refugee status and pain. Highlighted the need for physiotherapists to use good communication skills and cultural sensitivity for effective and patient centred rehabilitation outcomes.	**Refugee Health; Cultural Competence;** Refugees and the Healthcare System.
Nyboe et al.[17]	To compare bodily symptoms in traumatised refugees and Danish war veterans with post-traumatic stress disorder (PTSD) with healthy controls.	Controlled, descriptive study	Traumatised refugees have poorer movement function and more bodily complaints than healthy individuals. The Body Awareness Movement Quality and Experience scale (BAS MQ-E) may be a useful outcome measure when working with people with PTSD.	**Refugee Health.**

Palic and Eiklit[18]	To describe a specific, culturally diverse population of refugees in terms of traumatisation and symptom levels as well as global functioning and social support; and assess the effectiveness of the multidisciplinary treatment offered.	Longitudinal, single cohort study	Found that there were high rates of physical and mental health problems (including PTSD) among refugee populations and described determinants of maintenance and severity of PTSD. Physiotherapy in combination with psychotherapy and pharmacotherapy can lead to improvement in symptoms. Suggested that cognitive behavioural therapy (CBT) and body awareness therapy (BAT) are effective interventions.	**Refugee Health;** Cultural Competence; Refugees and the Healthcare System.
Persson and Gard[19]	To explore tortured refugees' expectations of the multidisciplinary pain rehabilitation programme offered at a specialised rehabilitation centre for torture victims.	Qualitative - semi-structured interviews	The refugees who had survived torture had different, mostly positive, expectations of the multidisciplinary pain rehabilitation programme. General expectations of the rehabilitation content, as well as specific expectations of the professionals' treatment, were expressed. Mutual and active participation and communication between patients and therapists were important expectations.	Refugee Health; **Cultural Competence; Refugees and the Healthcare System.**

Journal Pre-proof

Journal Pre-proof

Zander[20]	To determine the perceptions of pain and pain rehabilitation directed to resettled women from the Middle East, from a variety of health care professionals.	Delphi method	Highlighted the need to support and increase knowledge among healthcare professionals to involve the patient, their beliefs and expectations, background and current life situation, and to involve family and relatives in rehabilitation.	**Cultural Competence;** Refugees and the Healthcare System.

[a]Themes written in bold indicate that the theme was a key aspect of the article, themes in normal font indicate that the themes was present in the article but not a central focus.

Journal Pre-proof

Journal Pre-proof

Grey Literature

The exploration of grey literature returned nineteen documents. All documents went through full-text eligibility assessment. Documents were excluded if they were not specifically about physiotherapy practice; this resulted in thirteen documents being excluded. The six included grey literature articles are summarised in Table 4.

Journal Pre-proof

1
2
3
4
5
6
7
8
9
10
11
12

Journal Pre-proof

Journal Pre-proof

Table 4: Summary of the relevant findings from the grey literature.

Author	Key aims and objectives	Methods	Summary of relevant findings	Themes[a]
EASP[21]	To build capacity through training of trainers in affected communities who can implement training activities for health workers so that they can develop intercultural competencies and have a clear understanding of a migrant sensitive health care delivery model.	Course syllabus	Describes 5 modules (including learning objectives, learning activities, and related reading): Context; Strengthening institutional capacity to organise the response; Capacity building for migrant sensitive health systems; Specific health concerns; Vulnerable groups.	**Refugee Health; Cultural Competence; Refugees and the Healthcare System.**
CARE[22]	To provide a syllabus for a training course for healthcare professionals working with migrants and refugees	Course syllabus	Suggests topics and approaches to topics to be covered in a training courses for healthcare professionals working with migrants and refugees. Lists competencies, knowledge and skills.	**Refugee Health; Cultural Competence;**

Journal Pre-proof

Journal Pre-proof

Chaudry[23]	To share strategies that physiotherapists can use at the organisational level and individual clinician level to assist in eliminating the language barrier between the physiotherapy professional and their patient with limited English proficiency.	Narrative	Describes organisational and clinician level strategies for physiotherapists to appropriately address a patient’s limited English proficiency for best practice to effectively work with the linguistically diverse patient populations.	**Cultural Competence;** Refugees and the Healthcare System.
MEM-TP Team[24]	To improve access to and quality of health services for migrants and ethnic minorities. It focused on reviewing, developing, testing and evaluating training in migrant and ethnic minority health for front-line health professionals in primary care settings.	Course syllabus and report	Describes the development, pilot and evaluation of a training programme for healthcare professionals working with migrants and ethnic minorities. Module units include knowledge about migrants’ health problems and health determinants, intercultural competence and diversity sensitivity, interpersonal skill development and strategies for people-centred health care services oriented towards cultural and ethnic diversity.	**Refugee Health; Cultural Competence; Refugees and the Healthcare System.**

Journal Pre-proof

Journal Pre-proof

Nielsen[25]	To describe physiotherapeutic tools that could be applied in practice for physiotherapists who work with torture survivors in third world countries with limited resources.	Guidelines	Gives detailed practical guidance for physiotherapists working with survivors of torture. Identifies 3 most important symptoms that may present: chronic pain, PTSD, sleep disturbance.	**Refugee Health;** Cultural Competence;
Vanstone et al.[26]	To provide a guide for doctors, nurses and other health care providers for promoting health when caring for people from refugee backgrounds.	Guidelines	Provides detailed advice on working with refugees to promote health with some aspects particular to the Australian context. Sections 2, 3, 4 and 5 provide valuable resources relevant to physiotherapy practice.	**Refugee Health;** Cultural Competence; Refugees and the Healthcare System.

[a]Themes written in bold indicate that the theme was a key aspect of the article, themes in normal font indicate that the themes was present in the article but not a central focus.

Journal Pre-proof

Journal Pre-proof

1 **Key themes identified**

2 The analysis of peer-reviewed and grey literature identified three key themes with five sub-
3 themes:

4 1. Refugee health
5 a. determinants of health
6 b. physical health
7 c. mental health
8 2. Cultural competence
9 a. cultural sensitivity
10 b. communication
11 3. Refugees and the healthcare system
12

13 ## Discussion

14

15 This comprehensive search of peer-reviewed and grey literature identified three themes that
16 can be used to inform the development of competencies needed by physiotherapists working
17 with refugees. It also highlights a lack of research in this area and the limited evidence for
18 physiotherapy interventions for refugees. Only ten relevant peer-reviewed articles were found
19 which emphasises the need for further research and education in this area. Furthermore, no
20 articles specifically outlined the competencies needed by physiotherapists working with this
21 population. However, the studies in this review do provide useful findings which could be used
22 to inform the development of a competency profile for physiotherapists working with refugees.

Journal Pre-proof

The sample sizes in these studies were generally small and the studies were published between 2002 and 2017. Consequently, they may not accurately reflect the situation for refugees today. This may limit the generalizability of the results to the current circumstance for refugees and should be considered when interpreting the results of this review.

Theme 1: Refugee Health

As displayed in Tables 3 and 4, many of the articles discussed the mental and physical health of refugees and the factors that can influence these aspects of health. This data constituted the first theme, refugee health, which focused on the physical and mental health issues exhibited by refugees and also encompassed the determinants of health for refugees. An individual's health is determined by the social and economic environment, the physical environment, and a person's characteristics and behaviours[27]. In the literature, many determinants have been identified that can affect refugees' health during and after the migratory process. Examples of health determinants that should be considered when working with refugees include: uncertainty about civil status, unstable accommodation or homelessness, loss of social networks and isolation, anxiety about family and friends, poverty, racism in the host society and lower average socioeconomic status[15,16,18,21,22]. The literature indicates a significant proportion of refugees will have been subject to severe physical and/or psychological torture and that this exposure may have long-term physical and psychological consequences[18,19,26]. When working with survivors of torture, physiotherapists should take general health, torture,

1 depression, stress, post-traumatic stress disorder, anxiety, migration history, social support,
2 and socioeconomic status into consideration when developing treatment plans[14].
3
4 Several articles covered the physical and mental health of refugees. Refugees are known to
5 have an increased risk of physical and mental health challenges because of the physical and
6 mental strain they are likely to have experienced[18]. Common physical health problems
7 reported in this population include infectious diseases, non-communicable diseases (NCDs),
8 such as diabetes, hypertension, coronary heart disease, and musculoskeletal problems (e.g.,
9 injuries, backache, non-specific body pain)[3,22,26].
10
11 The risks to health are particularly high when migration is due to violent conflicts and
12 associated with trauma, and it has been shown that pain is common in refugees who have
13 experienced trauma[16,17,19,25] and can have a significant impact both physically and
14 emotionally. The experience of pain can have a large impact on the individual's ability to
15 participate in their daily activities[16].
16
17 When treating refugees, physiotherapists must be aware that they may be survivors of torture.
18 There is a need to establish trust before inquiring about torture. Knowledge of the type of
19 torture employed can, however, aid in evaluating injuries, scars, and other chronic
20 sequelae[28]. For survivors of torture, pain is one of the most frequent complaints[19].
21 Physiotherapy is a key component of the multidisciplinary approach to chronic pain
22 management[29-31]. Managing chronic pain following torture is challenging due to the

Journal Pre-proof

Journal Pre-proof

1 comorbid presence of somatic, psychiatric and social problems[28]. A biopsychosocial approach
2 is needed to assess the total experience of pain and enable the development of
3 multidisciplinary treatment plans for chronic pain[28,32]. These treatment plans should be
4 tailored to the individual but may include: pain control, creating a realistic understanding of
5 problems, graded steps to achieve short- and long-term goals for function and increased
6 participation and focus on quality of life[14,28].
7
8 Additional physical impairments were found in the study by Nyboe et al.[17], where the bodily
9 symptoms of traumatised refugees and war veterans were compared with healthy controls in
10 Denmark. The refugees with post-traumatic stress disorder (PTSD) were found to have
11 significantly poorer stability, balance, flexibility and coordination in movement, more muscular
12 tension, more pain complaints, more restricted breathing, and greater limitations in activities of
13 daily life compared to the healthy controls. Refugees can demonstrate acquired brain damage
14 due to traumatic brain injury as a result of undernourishment or thirst for prolonged periods, or
15 different forms of torture. Traumatic brain injury can easily be confounded with PTSD as the
16 most common symptoms are memory and attention deficits, apathy, impaired social judgment,
17 distractibility, and impulsivity[18].
18
19 The available literature recognised that refugees also have complex mental health
20 needs[3,17,18]. These needs are a result of traumatic experiences, sociocultural variables and
21 economic conditions that negatively affect one's health[14]. Refugees may present with PTSD,
22 anxiety, and depression[3,17-19,21,25,26,32-34]. In their guideline for health professionals

1 caring for people with refugee backgrounds, Vanstone et al.[26] explained the importance of
2 knowledge of the psychological sequelae of trauma and torture. An individual's experiences of
3 trauma and torture may impact their ability to participate in assessment and treatment[26].
4 When designing physiotherapy treatment plans for individuals that are suffering from PTSD,
5 Nielsen[25] suggests that physiotherapists incorporate strategies that include: psychoeducation
6 about PTSD, breathing exercises, grounding exercise, body awareness therapy, mindfulness
7 training, physical training, relaxation massage and cognitive behavioural training[25].
8 Psychological recovery is assisted by attention to the individual's specific needs and, referrals
9 should be made for counselling and other forms of specialised care when appropriate[26].
10
11 *Theme 2: Cultural competence*
12
13 A client-centred approach is central in providing culturally competent care[14,16,19,21,33].
14 Cultural competence is defined as: "a set of skills or processes that enable health professionals
15 to provide services that are (culturally) appropriate for the diverse populations they serve"[35].
16 As displayed in Tables 3 and 4, cultural competence when treating refugees was a key aspect of
17 most of the included articles. This data constituted the second theme, cultural competence.
18 The literature within the second theme presented two inter-related subthemes: cultural
19 sensitivity and communication.
20
21 Refugees are a heterogeneous group of culturally, ethnically and linguistically diverse
22 individuals with complex health needs. Consequently, they can face a range of cultural barriers

Journal Pre-proof

Journal Pre-proof

1 to accessing care[3,36,37]. An understanding of these barriers is important when working with
2 this population[22]. The impact of cultural differences between patient and therapist on
3 assessment and treatment was highlighted and discussed in several papers. There was
4 recognition that culture can influence attitudes concerning disease, disability and the role of
5 health professionals[12,21,26] and cultural differences in beliefs about pain and disability may
6 play a role in the expression of distress and help-seeking behaviour[12,15,18,32,36]. In a
7 qualitative study investigating rehabilitation professionals' perceptions of cross-cultural
8 communication, Dressler and Pils[12] found differing beliefs regarding taking an active role in
9 rehabilitation and participating in activities of daily living were a source of frustration for the
10 rehabilitation professionals.
11
12 Health professionals need to recognise the influence of cultural aspects on functional activities
13 such as eating, hygiene and receiving visitors while in the hospital and be cognisant of these
14 influences when delivering rehabilitation programs[11]. In a study exploring the rehabilitation
15 of women resettled from the Middle East in Sweden, Zander et al.[20] identified cultural
16 differences relevant to healthcare between the women and the Swedish health professionals.
17 The women in this study placed importance on the role of religion and spirituality in their
18 recovery whereas this was not reported as relevant by the health professionals. The authors
19 state that health professionals need to be conscious about their own cultural backgrounds and
20 how their views affect their responses to the care of patients[20]. Similarly, Gard[13] advocated
21 the importance of being sensitive to each individual's religious beliefs, norms and values.

1 Additionally, health professionals need to consider cultural diversity when tailoring treatments
2 to refugees' individual needs.
3
4 Fougner and Hornvedt[13] highlighted the importance of reflecting on preconceived ideas or
5 biases when working with patients from different cultures. Physiotherapy students in the study
6 were found to switch between two models when dealing with diversity. Depending on the
7 context, students switched between the idea of "sameness" or "otherness." In one model, the
8 students respected the otherness of the Muslim patients and their dress choices as integral to
9 their culture. However, in the other model, the students perceived the women's dress choices
10 as inhibiting integration into the majority culture. Dogan et al.[11] argued that it is a matter of
11 ethical responsibility for health professionals to have the ability to explore the meaning of
12 illness, understand patients' social and family contexts and provide culturally competent care.
13 The literature supports the use of training to develop cultural competence[24,26] and Fougner
14 and Horntvedt[13] suggested that this topic should be included in the physiotherapy
15 curriculum.
16
17 Communication and the difficulties that arise due to language barriers were prominent and
18 recurring subjects in the literature[11,12,15,16,19,23]. Physiotherapists need strong, culturally
19 competent communication skills to ensure that appropriate care is provided to their patients.
20 Communication can be influenced by cultural and language barriers, and efforts should be
21 made to cope with these barriers[11,15,21]. It was evident in the current literature that the

Journal Pre-proof

Journal Pre-proof

1 care refugees receive can be improved by using professional interpreters when language
2 barriers occur[11,12,15,20,23,26].
3
4 Major language barriers that affect the ability to communicate the importance and benefits of
5 rehabilitation may have significant consequences and can lead to patient drop out. In a
6 qualitative study, Turkish migrant patients were found to place importance on good
7 communication, physical contact, and understanding of their culture-based expressions of
8 illness, while the healthcare professionals expressed that they need resources and personnel to
9 minimise language barriers as well as education and training in Turkish culture[11]. The authors
10 recommended simulation activities, cross-cultural communication exercises, immersion
11 programs, and didactic materials as appropriate learning tools[11].
12
13 *Theme 3: Refugees and the health care system*
14
15 The final theme covered refugees' experiences of accessing healthcare and navigating the
16 healthcare system in their host country. While refugees' experiences of healthcare were not a
17 key concept in all of the included studies, it was explored in several of them (see Tables 3 and
18 4). Refugees can face many barriers when trying to access healthcare, including difficulties in
19 understanding how to navigate foreign health systems[26], stereotyping, cultural issues,
20 communication difficulties and practical considerations[12,37]. Many are either unaware of
21 available services (such as primary healthcare) or specific health services (such as
22 rehabilitation)[3,38].

Journal Pre-proof

Journal Pre-proof

1 Persson and Gard[19] found that expectations of a multidisciplinary pain rehabilitation
2 program were mainly positive and expressed in terms of trust and hope in the professionals as
3 rehabilitation experts. Both positive and negative healthcare experiences were expressed by
4 participants in a study of Muslim women from migrant backgrounds in Sweden[16]. Positively,
5 there were reports of knowledgeable care providers who performed careful examinations.
6 However, other participants reported negative experiences, including ineffective treatment and
7 an impression of not having access to available treatment[16].
8
9 While this review focused on physiotherapy competencies, the need for a multi-disciplinary
10 approach to rehabilitation was recognised[19,20,28]. Persson and Gard[19] advocated that a
11 multi-disciplinary approach is key to the rehabilitation of survivors of torture. Similarly, Zander
12 et al.[20] highlighted the importance of multi-disciplinary collaboration with the patient to
13 overcome difficulties identifying and meeting their needs. Treatment interventions reported in
14 the literature included physical activity[19,20]; pain management[19,20,25]; cognitive
15 behavioural therapy[16] and body awareness therapy[18,25]. Implications for practice drawn
16 from the findings of this scoping review are displayed in Table 5. These practice points can be
17 used to inform the development of a competency profile for physiotherapists working with
18 refugees.
19
20 This review has highlighted the limited amount of literature describing competencies for
21 physiotherapists working with refugees and the need for more studies in this area. To improve
22 the evidence base, there is a need for experimental studies which evaluate treatment

Journal Pre-proof

1 approaches and physiotherapy interventions for refugees. Studies are also needed which
2 compare approaches and highlight the considerations needed for different cohorts of refugees.
3 Both quantitative studies which measure the outcomes of interventions and qualitative studies
4 that explore refugees' experiences of physiotherapy are warranted. There is also a need to
5 evaluate educational programmes which aim to develop the competencies of physiotherapists
6 working with refugees to investigate whether they have an effect on physiotherapists'
7 behaviours and ultimately patient outcomes.
8

Journal Pre-proof

Journal Pre-proof

Table 5: Implications for practice and suggested competencies for physiotherapists working with refugees.

Implications for practice
· Physiotherapists should be aware of the complex physical, mental and social problems which can contribute to poor health outcomes for refugees and impede their social integration. · A significant proportion of refugees have been subject to torture (physical or psychological) which can have long-term consequences for their physical and mental health. · When developing treatment plans for this cohort, physiotherapists should take general health, torture, depression, stress, post-traumatic stress disorder, anxiety, migration history, social support, and socioeconomic status into consideration. · Chronic pain is common in refugees, especially those who have experienced trauma and/or torture, and can have a significant impact on both physical and emotional well-being. · Treatment plans should be tailored to the individual and a biopsychosocial approach that includes physical, psychological and social-contextual factors is needed to assess the total experience of pain. · Refugees can have complex mental health needs and may present with PTSD, anxiety and/or depression. · Physiotherapists should be cognizant that health consultations can be a source of anxiety for refugees and employ appropriate strategies to mitigate for this.

Journal Pre-proof

Journal Pre-proof

- Physiotherapy interventions for patients with mental health issues can include psychoeducation about PTSD, breathing exercises, grounding exercise, basic body awareness therapy, mindfulness training, physical training, relaxation massage and cognitive behavioural training.
- Physiotherapists should be aware of the range of barriers that refugees can face to accessing care. Cultural barriers, stereotyping, communication difficulties and health professionals' lack of cultural awareness can be difficulties experienced by refugees.
- Physiotherapists must be aware of the influence that culture can have on attitudes concerning health, disability and the role of health professionals. They should recognise the influence of culture on functional activities and be sensitive to each individual's religious beliefs, norms and values.
- Physiotherapists should be conscious of their own cultural background and how it may affect their responses to and care of patients in pain.
- To provide appropriate care for refugees, it is essential that physiotherapists have strong, culturally competent communication skills.
- Professional interpreters should be used when there are language barriers.
- Difficulties in understanding how to navigate foreign health systems, stereotyping, cultural issues, poor understanding/awareness of available services, practical considerations and communication difficulties are barriers commonly faced by refugees when trying to access healthcare.

Journal Pre-proof

- Treatment interventions reported in the literature included physical activity, pain management, cognitive behavioural therapy (CBT) and body awareness therapy (BAT).

Journal Pre-proof

Journal Pre-proof

Journal Pre-proof

1 Limitations

2

3 There are some limitations of this scoping review that are worth noting. We were unable to
4 access the full-text articles for 2 studies even though efforts were made to source the articles
5 from other libraries and to contact the authors. The heterogeneity of the included studies made
6 it challenging to draw universal themes from the data. Thus, the conclusions made in this article
7 are at a high (rather than specific) level. We were unable to provide recommendations for
8 physiotherapy competencies specific to different contexts and cohorts of refugees. The
9 exclusion criteria for this study meant that studies related to professions other than
10 physiotherapy or to cultural groups other than refugees or migrants were excluded. Thus,
11 relevant information that may inform the competency profile for physiotherapists working with
12 refugees may have been missed.

13

14 Scoping reviews have inherent limitations because the focus is to provide breadth rather than
15 depth of information in a particular topic[39]. Only the reference lists of selected studies were
16 reviewed therefore it is possible that relevant articles may have been missed. Additionally,
17 because the aim of a scoping review is to map the evidence produced in a given area rather
18 than seek out the best available evidence to answer a specific research question, there was no
19 methodological quality assessment of the included articles[9,40]. However, care was taken to
20 ensure that all relevant articles were included in the study. When studies published in another
21 language were found these were translated (or analysed by other researchers) to allow them to
22 be screened.

Journal Pre-proof

23

24 **Conclusion**

25

26 This paper aimed to summarise core competencies for physiotherapists working with refugees
27 from peer-reviewed and grey literature. While this review focused on physiotherapy
28 competencies, there was recognition of the importance of a multi-disciplinary approach to
29 rehabilitation for this cohort. The main competencies detected are: 1) an understanding of
30 refugee health, 2) administration of culturally competent care, and 3) knowledge of healthcare
31 systems as they relate to refugees. These are, however, rather vague and non-specific and
32 signal the need for further examination of physiotherapy competencies to provide the highest
33 quality of care to this growing population. The limited amount of literature describing
34 competencies for physiotherapists working with refugees highlights a need to develop a
35 competency profile for this profession and to explore how best to teach this in higher education
36 institutes. It is our opinion that this review can be used to inform such a competency profile.

37

38 **Ethics approval**: N/A (scoping review)

39

40

41 **References**

42

43 **1.** WHO. Report on the health of refugees and migrants in the WHO European Region. Geneva;
44 World Health Organisation, 2018. Available from:

Journal Pre-proof

45 http://www.euro.who.int/__data/assets/pdf_file/0004/392773/ermh-eng.pdf?ua=1 [cited 2019
46 July 03].
47 **2.** UNHCR. Global Trends – Forced displacement in 2018. Geneva; United Nations High
48 Commisioner for Refugees, 2019. Available from: https://www.unhcr.org/5d08d7ee7.pdf [cited
49 2019 July 03].
50 **3.** Khan F, Amatya B. Refugee health and rehabilitation: challenges and response. J Rehabil Med.
51 2017;49(5):378-384. doi: http://dx.doi.org/10.2340/16501977-2223. PMID: 28440839.
52 **4.** Asgary R. Graduate public health training in healthcare of refugee asylum seekers and clinical
53 human rights: evaluation of an innovative curriculum. Int J Public Health. 2016;61(3):279-287.
54 doi: http://dx.doi.org/10.1007/s00038-015-0754-z. PMID: 26496904.
55 **5.** Culturally responsive clinical practice: Working with people from migrant and refugee
56 backgrounds. Canberra; Migrant and Refugee Women's Health Partnership, 2019. Available
57 from: https://www.midwives.org.au/sites/default/files/uploaded-content/website-
58 content/culturally_responsive_clinical_practice_-
59 _working_with_people_from_migrant_and_refugee_backgrounds_jan2019.pdf. [cited 2019 July
60 03].
61 **6.** UNHCR. UNHCR viewpoint: 'Refugee' or 'migrant' – Which is right? Geneva; United Nations High
62 Commisioner for Refugees, 2016. Available from:
63 https://www.unhcr.org/news/latest/2016/7/55df0e556/unhcr-viewpoint-refugee-migrant-
64 right.html. [cited 2019 July 03].
65 **7.** Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res
66 Methodol 2005;8(1):19-32. https://doi.org/10.1080/1364557032000119616.
67 **8.** Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implement Sci.
68 2010;5(1):69. https://doi.org/10.1186/1748-5908-5-69. PMID: 20854677.

Journal Pre-proof

69 **9.** Peters MDJ GC, McInerney P, Baldini Soares C, Khalil H, Parker D. Scoping reviews. In:
70 Aromataris E, Munn Z (editors). Joanna Briggs Institute Reviewer's Manual. Australia; The
71 Joanna Briggs Institute, 2017. Available from:
72 https://wiki.joannabriggs.org/display/MANUAL/Chapter+11%3A+Scoping+reviews [cited 2019
73 July 03].
74 **10.** Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res.
75 2005;15(9):1277-1288. https://doi.org/10.1177/1049732305276687 PMID: 16204405
76 **11.** Dogan H, Tschudin V, Hot İ, Özkan İ. Patients' transcultural needs and carers' ethical responses.
77 Nurs Ethics. 2009;16(6):683-696. https://doi.org/10.1177/0969733009341396. PMID: 19889910.
78 **12.** Dressler D, Pils P. A qualitative study on cross-cultural communication in post-accident in-
79 patient rehabilitation of migrant and ethnic minority patients in Austria. Disabil Rehabil.
80 2009;31(14):1181-1190. https://doi.org/10.1080/09638280902773786 PMID: 19479576.
81 **13.** Fougner M, Horntvedt, Tone. Perceptions of Norwegian physiotherapy students: Cultural
82 diversity in practice. Physiother Theory Pract. 2012;28(1):18-25.
83 https://doi.org/10.3109/09593985.2011.560238. PMID: 21682583.
84 **14.** Gard G. Factors important for good interaction in physiotherapy treatment of persons who have
85 undergone torture: A qualitative study. Physiother Theory Pract. 2007;23(1):47-55.
86 https://doi.org/10.1080/09593980701209584. PMID: 17454798.
87 **15.** Möller R, Hellmark, I, Gyllenstein, AL. The problems associated with the immigrant patient and
88 the possible physical therapy testament strategies used. *Nordisk Fysioterapi.* 2002;6(2):74-81.
89 **16.** Müllersdorf M, Zander V, Eriksson H. The magnitude of reciprocity in chronic pain management:
90 experiences of dispersed ethnic populations of Muslim women. Scand J Caring Sci.
91 2011;25(4):637-645. https://doi.org/10.1111/j.1471-6712.2011.00872.x PMID: 21371070.

92 **17.** Nyboe L, Bentholm A, Gyllensten AL. Bodily symptoms in patients with post traumatic stress
93 disorder: A comparative study of traumatized refugees, Danish war veterans, and healthy
94 controls. J Bodyw Mov Ther. 2017;21(3):523-527. https://doi.org/10.1016/j.jbmt.2016.08.003
95 PMID: 28750959.
96 **18.** Palic S, Elklit A. An explorative outcome study of CBT-based multidisciplinary treatment in a
97 diverse group of refugees from a Danish treatment centre for rehabilitation of traumatized
98 refugees. Torture 2009;19(3):248-270. PMID: 20065543.
99 **19.** Persson AL, Gard G. Tortured refugees' expectations of a multidisciplinary pain rehabilitation
100 programme: An explorative qualitative study. J Rehabil Med. 2013;45(3):286-292.
101 https://doi.org/10.2340/16501977-1101. PMID: 23306534.
102 **20.** Zander V, Eriksson H, Christensson K, Müllersdorf M. Rehabilitation of Women From the Middle
103 East Living With Chronic Pain—Perceptions From Health Care Professionals. Health Care Women
104 Int. 2015;36(11):1194-1207. https://doi.org/10.1080/07399332.2014.989439 PMID: 25513750
105 **21.** EASP. Design of a training programme on the health response to refugees; asylum seekers and
106 other migrants for health managers, health professionals and administrative staff. Granada,
107 Spain; Escuela Andaluza de Salud Pública, 2016. Available from: https://www.sh-
108 capac.org/pluginfile.php/1463/mod_label/intro/D5-1_SH-CAPAC_TrainingProgramme_WP5.pdf
109 [cited 2019 July 03].
110 **22.** CARE. Common Approach for Refugees and Other Migrants: Training Module and Course
111 Syllabus. European Union; Common Approach for REfugees and other migrants' health, 2017.
112 Available from:
113 https://drive.google.com/file/d/1mJEmULbVHMwHtT0WEEx_qSojXUagmAKl/view. [cited 2019
114 July 03].

115 **23.** Chaudry AN, Beasley E. Linguistically Competent Care for Patients with Limited English
116 Proficiency: a Necessity for Best Practice in Physical Therapy. HPA Resource 2012;12(3):24-26.
117 **24.** MEM-TP Team. MEM-TP project final report: Training packages for health professionals to
118 improve access and quality of health services for migrants and ethnic minorities, including the
119 Roma. Granada, Spain; Escuela Andaluza de Salud Pública, 2016; https://www.mem-
120 tp.org/pluginfile.php/1494/mod_resource/content/1/MEM-TP%20Final%20Report_D9.pdf.
121 [cited 2019 July 03].
122 **25.** Neilsen H. Interventions for Physiotherapists Working with Torture Survivors. Copenhagen;
123 Dignity – Danish Institute Against Torture, 2014. Available from: https://dignity.dk/wp-
124 content/uploads/pubseries_no6.pdf. [cited 2019 July 03].
125 **26.** Vanstone RK, Kaplan I, Biggs BA, Schulz T, Gardiner J, Walker K, Willey S, Paxton G, Maloney M,
126 Crow, L. Promoting refugee health: a guide for doctors, nurses and other health care providers
127 caring for people from refugee backgrounds. 3rd Edition. The Victorian Foundation for Survivors
128 of Torture Inc, 2012. http://refugeehealthnetwork.org.au/wp-content/uploads/PRH-online-
129 edition_July2012.pdf [cited 2019 July 03].
130 **27.** WHO. Health Impact Assessment. Geneva; World Health Organisation, 2018. Available from:
131 https://www.who.int/hia/evidence/doh/en/. [cited 2019 July 03].
132 **28.** Carinci AJ, Mehta P, Christo PJ. Chronic pain in torture victims. Curr Pain Headache Rep.
133 2010;14(2):73-79. https://doi.org/10.1007/s11916-010-0101-2. PMID: 20425195.
134 **29.** Semmons J. The role of physiotherapy in the management of chronic pain. *Anaesthesia &*
135 *Intensive Care Medicine.* 2016;17(9):445-447. https://doi.org/10.1016/j.mpaic.2016.06.006.
136 **30.** Mills S, Torrance N, Smith BH. Identification and management of chronic pain in primary care: a
137 review. Curr Psychiatry Rep 2016;18(2):22. PMID: 26820898 https://doi.org/10.1007/s11920-
138 015-0659-9.

Journal Pre-proof

139 **31.** Griffin H, Hay-Smith EJC. Characteristics of a well-functioning chronic pain team: A systematic
140 review. NZJP. 2019;47(1). https://doi.org/10.15619/NZJP/47.1.02.
141 **32.** Amris K, Williams AC. Managing chronic pain in survivors of torture. Pain manag. 2015;5(1):5-12.
142 https://doi.org/10.2217/pmt.14.50 PMID: 25537694.
143 **33.** Brzoksa P, Razum O. Herausforderungen einer diversitätssensiblen Versorgung in der
144 medizinischen Rehabilitation. Die Rehabilitation. 2017;56(5). https://doi.org/10.1055/s-0043-
145 100014.
146 **34.** Jorgensen U, Melchiorsen H, Gottlieb AG, Hallas V, Nielsen CV. Using the International
147 Classification of Functioning, Disability and Health (ICF) to describe the functioning of
148 traumatised refugees. Torture 2010;20(2):57-75. PMID: 20952823.
149 **35.** Bhui K, Warfa N, Edonya P, McKenzie K, Bhugra D. Cultural competence in mental health care: a
150 review of model evaluations. BMC Health Serv Res. 2007;7(1):15. https://doi.org/10.1186/1472-
151 6963-7-15 PMID: 17266765.
152 **36.** Côté D. Intercultural communication in health care: challenges and solutions in work
153 rehabilitation practices and training: a comprehensive review. Disabil Rehabil. 2013;35(2):153-
154 163. https://doi.org/10.3109/09638288.2012.687034. PMID: 22616895.
155 **37.** Devlin JT, Dhalac D, Suldan AA, Jacobs A, Guled K, Bankole KA. Determinants of physical activity
156 among Somali women living in Maine. J Immigr Minor Health. 2012;14(2):300-306.
157 https://doi.org/10.1007/s10903-011-9469-2. PMID: 21479887.
158 **38.** Lindsay S, King G, Klassen AF, Esses V, Stachel M. Working with immigrant families raising a child
159 with a disability: challenges and recommendations for healthcare and community service
160 providers. Disabil Rehabil. 2012;34(23):2007-2017.
161 https://doi.org/10.3109/09638288.2012.667192 PMID: 22455458.

Journal Pre-proof

162 **39.** Tricco AC, Lillie E, Zarin W, et al. A scoping review on the conduct and reporting of scoping
163 reviews. BMC Med Res Methodol. 2016;16(1):15. https://doi.org/10.1186/s12874-016-0116-4
164 PMID: 26857112.
165 **40.** O'Brien KK, Colquhoun H, Levac D, Baxter L, Tricco AC, Straus S et al. Advancing scoping study
166 methodology: a web-based survey and consultation of perceptions on terminology, definition
167 and methodological steps. BMC Health Serv Res. 2016;16(1):305.
168 https://doi.org/10.1186/s12913-016-1579-z. PMID: 27461419.
169

Journal Pre-proof